AEROSOL AGE

THE MAGAZINE OF PRESSURE PACKAGING

IN THIS ISSUE:

Glycol-Propellant Systems
St. John's Aerosol Laboratory
The Aerosol Rationale
Chlorinated Hydrocarbons
Plastic Aerosol Containers
Sales Spurt in Great Britain
Butane-Propane Propellants . . . IV

FEBRUARY, 1960

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THIS MONTH'S COVER

Second major company to market an aerosol household furniture wax is The Simoniz Co., Chicago, which this month introduced its "Tone" on the national market. Nationwide debut followed successful test marketing in Columbus, O. and Peoria, Ill. Product, packaged in 6½-ounce can, will retail for 89 cents. Valve is a "B-9 fast-gassing" unit with mechanical break-up button made by VCA, Inc., Bridgeport.

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FEBRUARY, 1960 VOL. 5, No. 2

AEROSOL AGE

The magazine of pressure packaging

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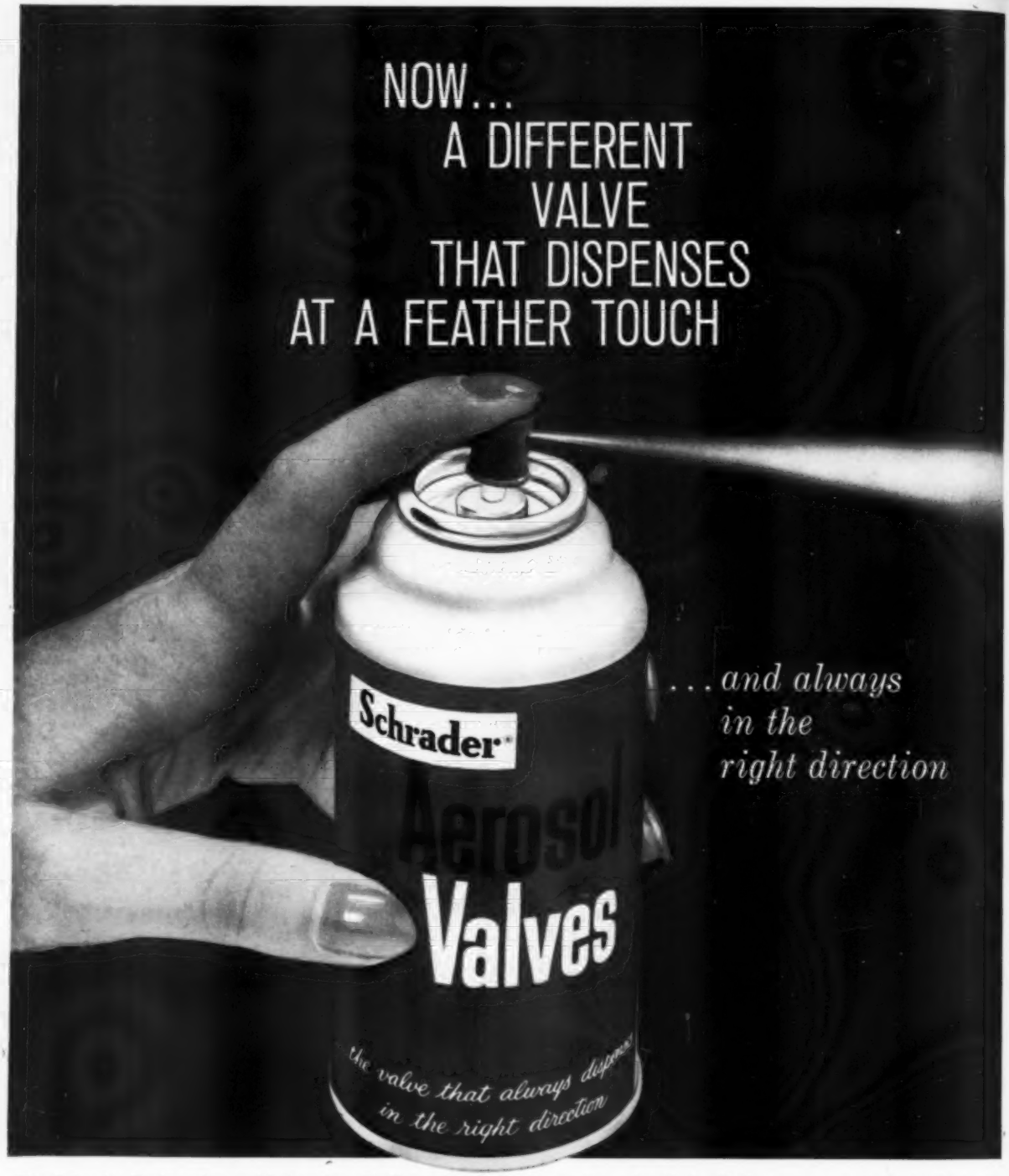

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Ronald McIntyre, chief engineer for Cooper, McDougald & Robertson, Ltd., Berkhamsted, Herts., England, adjusts the 12-foot instrument panel on the new type pyrethrum extraction unit which his company installed in the Newark, N. J. plant of Prentiss. The unit, which employs a tripe distillation process, is the first of its kind to be installed in the United States.

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INDUSTRY MEETING CALENDAR

American Management Association, special conference on planning new products, Drake Hotel, Chicago.....Feb. 24-26

Society of Cosmetic Chemists, New York Chapter, Hotel New Yorker, New York.....March 2

Chemical Specialties Manufacturers Assn., Meeting of Board of Governors, Executive Boards, and Committees, Belleview-Biltmore Hotel, Belleair, Fla. .....March 21-23

National Packaging Exhibition, Convention Hall, Atlantic City, N. J.. .....April 4-8

American Chemical Society, national meeting, Statler-Hilton, Sheraton-Cleveland Hotel, and Cleveland Auditorium.....April 5-14

Society of Cosmetic Chemists, New York Chapter, Hotel New Yorker, New York .....April 20

Toilet Goods Association, scientific section, spring meeting, Waldorf-Astoria Hotel, New York, May 11.

Chemical Specialties Manufacturers Assn., 46th mid-year meeting, The Drake Hotel, Chicago Ill..... .....May 15-17

Toilet Goods Association, annual convention, Poland Spring House, Poland Spring, Me..... .....June 27-30

from the

EDITOR'S MAILBAG

To the Editor:

In your report on the Packaging Machinery Show (your December issue), it was stated that the Kartridg Pak Co.'s "KP-1000" line operates electrically. As a point of fact, this line is completely air operated, and there are no electrics on it at all. This is one of the selling points of the line, since explosion proofing is not a problem.

George Heath
General Manager
THE KARTRIDG PAK CO.
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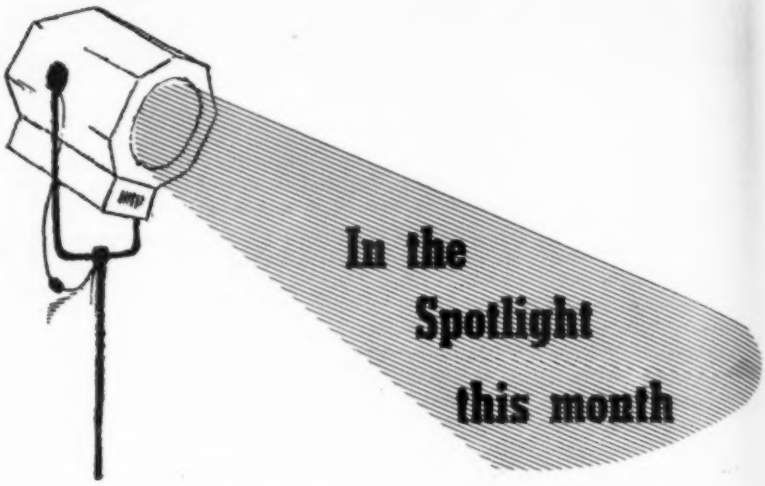
•

To the Editor:

In your article in the January issue on the Aroma-Rama process, you refer to Mike Todd Jr.'s Smell-O-Vision production as another system "believed to operate on similar principles".

The writer has worked closely with Mike

(*Continued on Page 92*)



• **Does the Product Have a Rationale?** . . . Dr. H. S. Rudzki, Rexall vice-president, takes a calculated look at the reason-for-being of a number of leading aerosol product types. His article, beginning on page 20, should prove a valuable guide to new product planning.

• **St. John's University Plans New Aerosol Courses** . . . Aerosol technology becomes an integral part of the curriculum at St. John's University College of Pharmacy. Photographs and story appear on page 24.

• **Good Weather, TV Advertising Spur British Aerosol Sales** . . . An up-to-date report on the British aerosol picture, with estimated sales totals, noteworthy new products, and market trends, begins on page 30.

• **Chlorinated Hydrocarbons in Cosmetic Aerosols** . . . Dr. Hans Kuebler, European expert on hydrocarbons, discusses the pros (and some of the cons) of the use of these materials in cosmetics. Page 49.

• **Butane and Propane as Aerosol Propellants (Part IV)** . . . Continuing its symposium on safety factors with these propellants, **Aerosol Age** extends its coverage to include a general summary of many commercial considerations of these propellants, on page 54.

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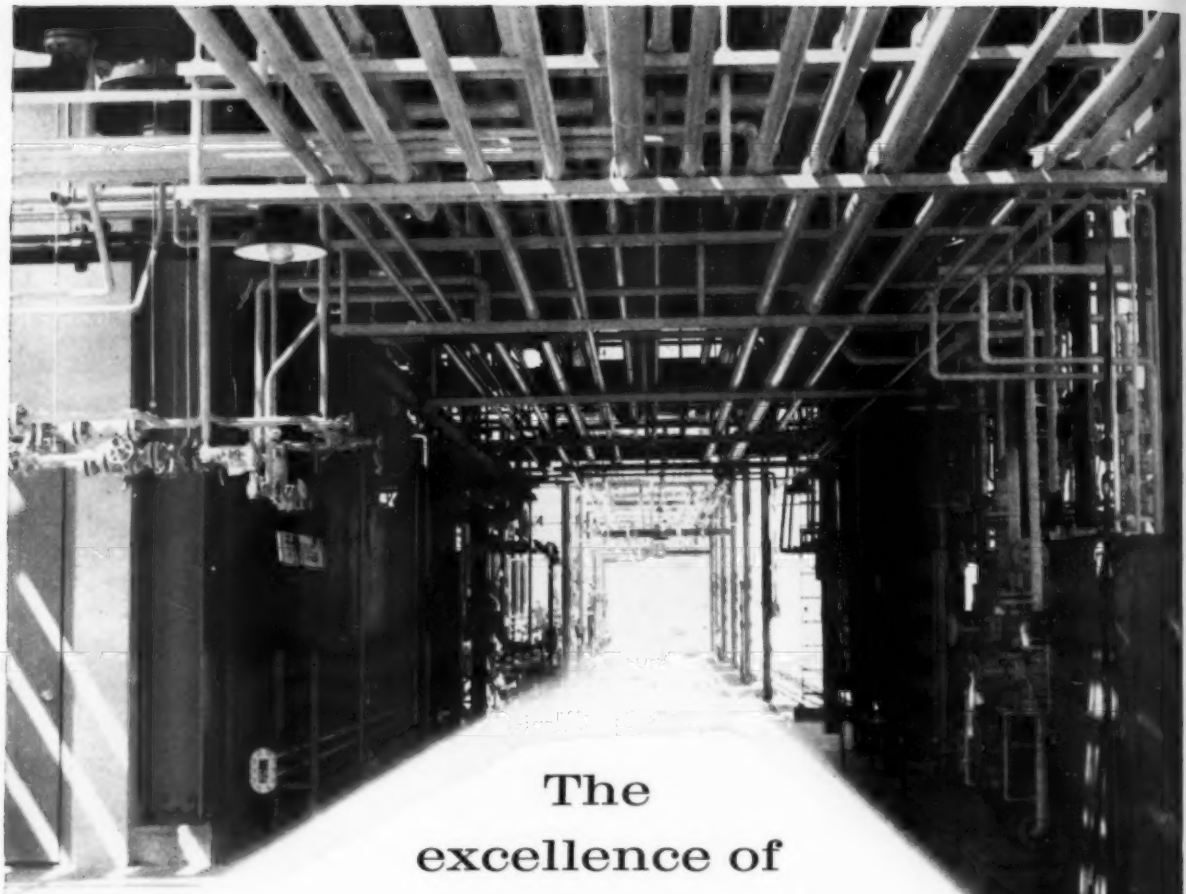

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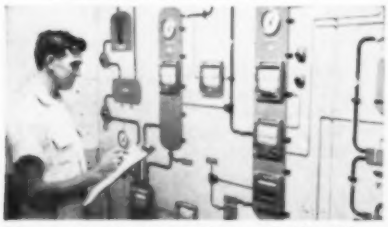

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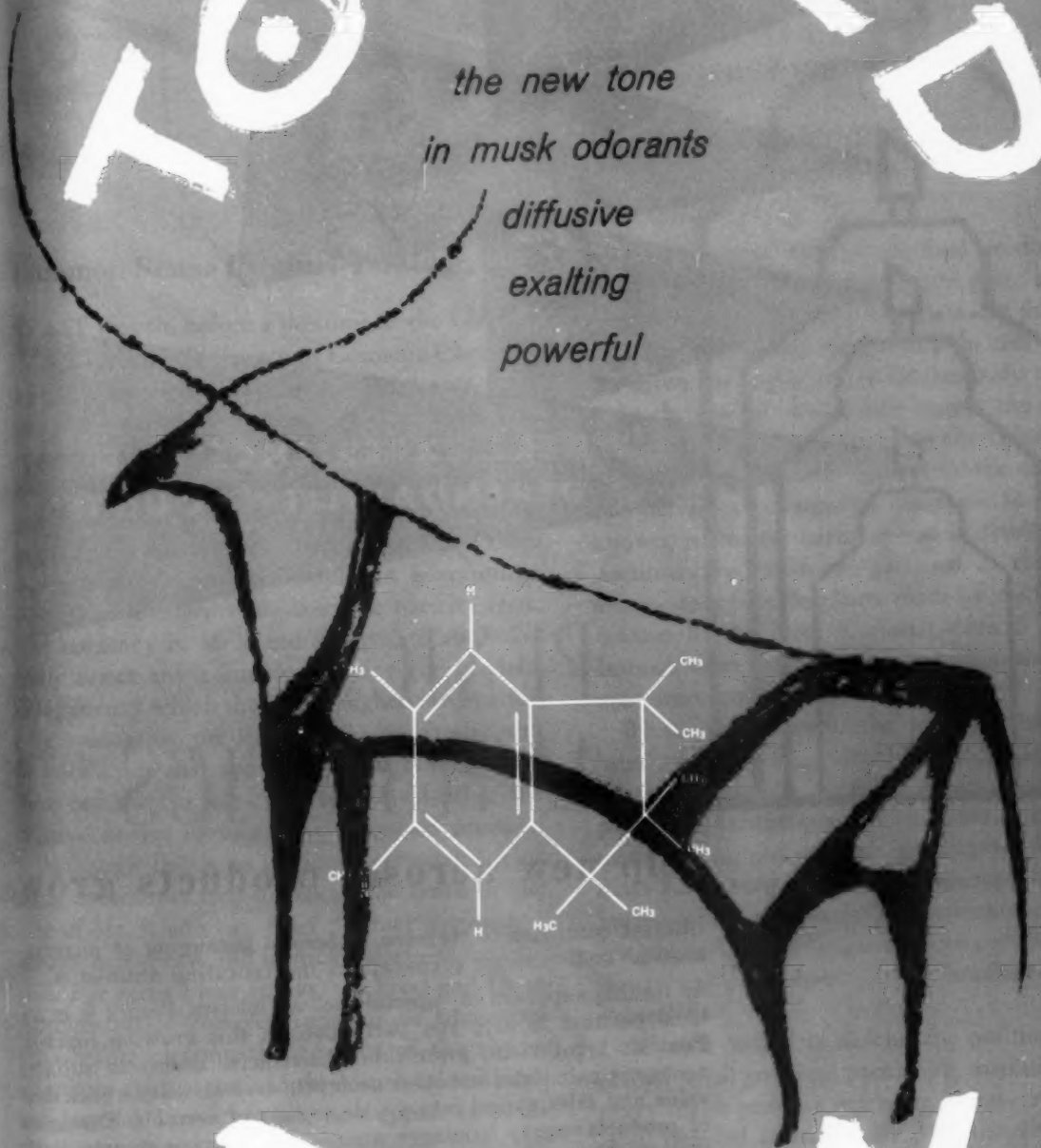

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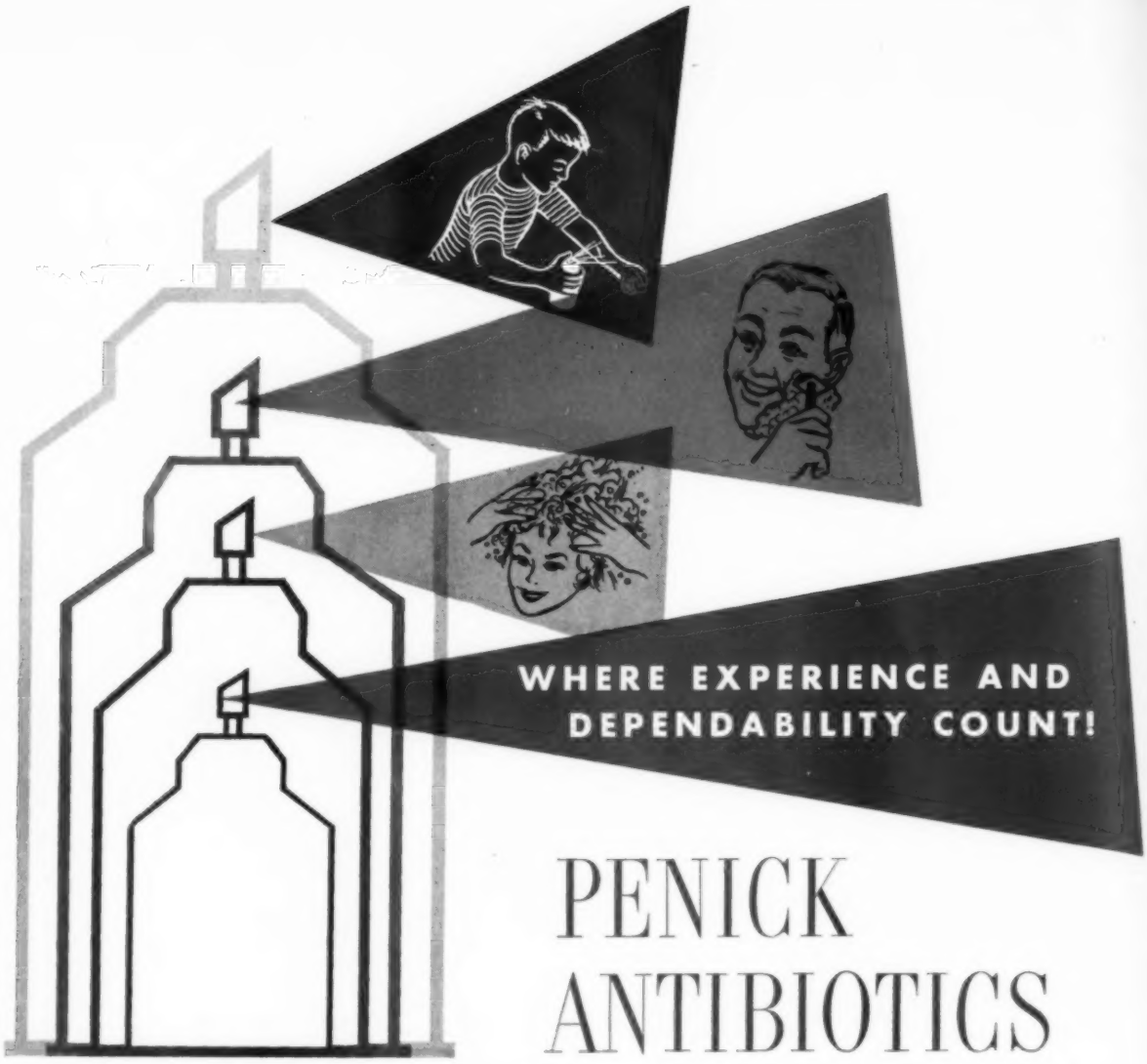

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EDITORIALS

Common Sense Product Testing . . .

LAST month, before a meeting of the Chicago Chapter of the Society of Cosmetic Chemists, a paper delivered by Raymond E. Reed, vice-president and technical director of The Toni Co., expressed more common sense on the subject of cosmetic product testing than has been heard in public in a long time. Reported at some length on page 23 of this issue, the address charged that there is a growing "scare" philosophy in government circles about interpreting cosmetic toxicity tests. The tendency is, Mr. Reed charges, to automatically reject any cosmetic product (or product component) which shows the slightest indication of carcinogenic properties in animal tests; and he points out that apparently animal tests *alone* have become the sole criterion in evaluating the relative danger of using any suspected product.

Although this is an obvious overstatement of a highly complicated situation, the truth in the case of Mr. Reed's two chief product witnesses—aerosol hair sprays and lipstick colors—is irrefutable. For aerosol hair sprays, the Food and Drug Administration completed exhaustive laboratory tests before clearing the product of the almost disastrous charges made in the *New England Medical Journal*. Lipstick colors now appear to be on the danger list, despite stiff opposition from the Toilet Goods Association and other industry groups and despite the long record of daily usage by millions of U. S. women.

Animal inhalation tests *are* probably necessary for a good many pressurized products, particularly cosmetics. But, as Mr. Reed contends, it was never the intention of anyone to judge a product by these results alone. The whole range of valid cosmetic tests of the final product, and of its ingredients, should always be given as much weight as animal testing—particularly since it is common knowledge that results in test animals are often *not* duplicated in human body tissue.

In the case of aerosol hair sprays, the striking aspect of the entire business was the vulnerability of the aerosol industry (especially the marketers themselves) to charges of this type. So far as is known, no major marketer had available concise documentary evidence—gathered in the laboratory—to refute the claims made by the St. Louis doctors in the *New England Medical Journal*. Instead, there seemed to be near panic among the marketers and fillers.

By its very nature, the aerosol product has been, and will be, vulnerable to charges about relative inhalation danger. Certain pigments in paints and lacquers, insect toxicants, talc in cosmetic sprays, and so forth, are all possible candidates for future charges by preventive medicine buffs—whether powerful governmental researchers, public-spirited "snipers" from outside the industry and government, or just headline-hunting journalists.

What is needed to defend the position of the aerosol as a growing packaging medium is for every major product marketer to have at his disposal detailed animal study data concerning inhalation and other ingestion of his product. This will give him an invaluable and quick answer should his product come under fire next. It is obvious that the recent cranberry scare has made at least the present administration "cancer conscious", and that suspected consumer products will henceforth come under quick, careful surveillance.★

Does the product have a

By Dr. H. S. Rudzki
Vice-President in Charge of New Products
The Rexall Drug Co.
Los Angeles, Calif.

Biography:

Dr. H. S. Rudzki was born in Warsaw, Poland, attended the University there and studied under Professor Grignard in France, where he obtained his doctorate. In Poland he owned his own pharmaceutical company, Opotherapia, one of the most important ethical pharmaceutical companies in Western Europe at the time. He left Poland in 1951 and became technical director of the pharmaceutical firm of Schiapparelli in Italy. After three years, he came to the United States and is now vice-president of Rexall Drug Co. in charge of new products.

IS IT logical? Is it rational? These are the questions that we ask ourselves each time consideration is given to packaging a new product in an aerosol container. The philosophy of Rexall Drug Co.'s new product aerosol department may be summed up this way: Does it have a rationale?

Webster defines "rationale" as an "underlying reason, a rational foundation" and this is precisely what we are looking for in every new product that is evaluated for aerosol packaging.

Proof that logic does sell was dramatically given at the Rexall Drug Store set up at the recent International Trade Fair in Poznan, Poland. Despite that fact that the Polish people have extremely limited funds to spend on personal items, the enthusiasm for the aerosol-packaged toothpaste and other aerosol products at this fair was phenomenal. It was found that these people would buy an aerosol product, not for its "gadget" or "push-button" appeal, but because it satisfied the logical mind. We are convinced that the appeal to logic in an aerosol packed product sells Americans too, despite the sometimes expressed thought that the "have-everything" American is just gadget-happy.

Responsible members of the aerosol industry do recognize the danger of packaging a product in an aerosol container, just for the novelty or gadget appeal. However, the temptation is always there to put every last product on the market in an aerosol container and raise the price simply because it is a push-button dispensed item. Industry must guard itself against such an undertaking by those who would damage the reputation of all aerosols. The consumer need for an aerosol pack must be considered. There is no justification for a higher price on an aerosol product over a conventionally packed item unless a true rationale exists for the aerosol container. Is it more convenient? Does it give the consumer a product that acts more effectively as an aerosol? Does it save time for the consumer? These are some of the questions that must be answered. The general principle that we impress on ourselves and on our customers is this: the consumer does not pay a premium for aerosol products if he gets a product that he can't get in any other way.

Rexall brought out an aerosol toothpaste after more than two years research on formulation alone. Here is a product that has a real rationale for aerosol packaging. The method of dispensing toothpaste via aerosol is almost perfect. The bulk is very stable, both chemically and physically; it is convenient for the customer to use; it is a very aseptic container, making the package extremely hygienic; the flavor and consistency are retained to the very last; and waste is very low.

After somewhat shaky acceptance by the public, aerosol dispensed toothpaste now accounts for more than 35% of total toothpaste sales; and in the near future, we expect that practically 100% of all toothpaste will be aerosol packed.

The product does, however, suffer from a few drawbacks. The consumer doesn't know when he is running low on the product and thus runs completely out before he has to make the trip to the drug store for a new supply. A device to tell him when to buy a new

rationale?

Recent trends in design, merchandising and packaging are illustrated by the new "on/tap" line of coated-glass aerosols packaged by Rexall Drug Co.

can is needed. This problem may be solved when plastic containers are available at a lower cost and in translucent quality. Certain disadvantages of the plastic container must also be taken care of, such as permeability of the plastic to the propellant. The plastic "Delrin" is considered to have good possibilities; also high density nylon products. A combination metal and plastic container with a clear plastic "window" may be the answer. The consumer could then look through the "picture window" and see when his supply was getting low.

Of late there has been noted a definite change in general toothpaste flavor preference. Fruit flavors are becoming more popular at the expense of the perennial favorite, peppermint. The white color for the product seems well established and there is little possibility of another color challenging this position. Look for a "family" size aerosol toothpaste soon. This is a natural merchandising development and should have favorable acceptance.

One other problem that exists (to a lesser extent now) with aerosol toothpaste is the amount of product left in the can when it is considered empty. As high as 10 to 15% waste has been reported. Rexall has reduced this waste to about 5% by providing for quick drainage down the inside of the container. This is accomplished by a formulation that provides for closely controlled viscosity of product; also it involves a procedure for lining the inside of the can so that the surface facilitates easy and fast drainage of paste.

Little possibility of a market for a refillable type aerosol toothpaste is seen. The American mind seems to rebel at the thought of being a captive customer, of being tied to one type or brand. We are all conditioned to using a product, throwing the container away and going out to buy a new one. Advertising in other fields helps to create this way of life. The disposable item is popular.

When a doctor recommends to a patient that he go to the beach for the salt air, he is really getting aerosol therapy by inhaling the fine salt spray mist. In the nasal decongestant, the patient gets a perfect mist or spray in exactly the desired dose. Here is true rationale for a product packed as an aerosol. Rexall was the first company to get an OK from the Food and Drug Administration for the use of fluorinated hydrocarbon propellants in the nasal decongestant.

The mucosa is permeable to fine sprays and this method of administering some drugs is much more effective

Perfection of a metered valve for aerosols has opened many new avenues for packaging drug products requiring a specified dosage. The Nasal Spray is a logical adaptation for the metered aerosol pack.

than by giving a hypodermic. It may be desirable to package a large variety of drugs this way, if they are physiologically better for the patient. Even aspirin could be packaged as an aerosol, but to what advantage? If headaches were relieved more quickly, then it would have some advantage. A rationale may be said to be lacking in this case.

The logic of an aerosol pack for multivitamins speaks for itself. It can be justified on the basis of convenience to the housewife . . . easier to administer to the children. However, there appears to be little justification for an aerosol pack based on more effective vitamin action inside the body.

One of the more recent successes in aerosol drug packaging is the Rexall "Merthiolate Spray," a product that offers both convenience and more effectiveness.

Aerosol techniques are sure to be greatly expanded in the drug field in the immediate future. Much more research is needed in this specialized field, such as careful studies of solubilities and investigation of optimum particle size, different valves and various pressures, permeability figures, etc. The comparative effectiveness of large vs. small droplets in administration and therapeutic value is another important aspect. A period of 18 months is considered the minimum research time on a new product in the aerosol drug field.

More than 60 aerosol products are packed by the Rexall Drug Co. in its production laboratory in St. Louis. The company, largest and most diverse private aerosol packer in the country, maintains a special aerosol research laboratory at the home office in Los Angeles, as well as production control laboratories in St. Louis. Rexall has a double responsibility when it comes to marketing aerosols. Throughout the nation, the local Rexall druggist is often an important man in town beyond his duties as a pharmacist and business proprietor. He may be the mayor, or councilman or other well-known civic figure. The Rexall Drug Co. feels that it has a responsibility to him as an individual to maintain the highest

One of Rexall's newest products in the drug field is Aerosol Merthiolate. Convenience and more effective application are obvious advantages of this aerosol-packed product.

quality in all its products, including and especially aerosols.

The aerosol industry expanded tremendously at first. Many people who went into the business of aerosol packing were not drug or cosmetic manufacturers, but were good businessmen. These men truly ushered in the age of "aerosols." Competition then became strong and quality of product was the keynote. Improvement in quality meant that research laboratories were needed and research dollars required. The technical man became important, and larger manufacturers with already established research teams had an advantage. Rexall's success in the aerosol field is, in part, due to the extensive background of the company in the pharmaceutical and cosmetic business.

In the future, we may look for more cosmetic creams, hair shampoos, detergents and similar products to be marketed. Rexall already has a shampoo in an aerosol container.

The food aerosol industry is a young giant and will continue to grow, since many food products have a true rationale for being packed as aerosols. A "sealed-in" flavor is assured; a metered valve gives the same quantity of product for each serving; and in the case of coffee, a truly "instant"

(*Continued on Page* 95)

Packaging Show Expects 25,000 Attendance in Atlantic City

MORE than 25,000 executives are expected to attend the 29th National Exposition and National Packaging Conference in Atlantic City April 4-7, according to the American Management Association. The latest in packaging machinery and equipment, materials and supplies, containers and services will be shown by some 335 firms in Atlantic City's huge Convention Hall. Included will be at least three complete aerosol filling lines and numerous filling units, container and propellant displays, etc.

The first session of the three-day conference, scheduled for April 4-6, will be keyed to the subject of the new dimensions of packaging, and packaging's relationship with the 1960 distribution dollar. Another session will examine package manufacturing methods and approaches as a basis for product sales. The final day's panel will deal with package research and package marketing.

The Exposition will be open for four days for a total of 33 hours. The show schedule is as follows: Monday, April 4, 10 a.m. to 6 p.m.; Tuesday, April 5, 10 a.m. to 9 p.m.; Wednesday, April 6, 10 a.m. to 6 p.m.; Thursday, April 7, 10 a.m. to p.m.

Packaging conference sessions are open to nonmembers as well as members of the American Management Association. AMA members may attend the entire conference for a fee of $25 or individual sessions at $10 each. The nonmember fee for the full conference is $35; per session, $15. Registration for the conference may be made in advance or at the door. Registration blanks are available from the Packaging Division, American Management Association, 1515 Broadway, New York 36..

Conference registrants will be admitted to the exposition without paying any show registration fee. Conference badges provide admittance to both events. Exposition badges, however, are not valid for conference sessions.

"Reckless" Extrapolation of Test Results Charged by Toni Research Director

THE extrapolation of animal test results to human experience becomes reckless when the extrapolations fly in the face of that experience, Raymond E. Reed, vice president and technical director of The Toni Co., Chicago, told the Jan. 12 meeting of the Chicago Chapter of the Society of Cosmetic Chemists. Citing the recent scare about aerosol hair sprays as a case in point, Mr. Reed charged that "considerable political pressure" has resulted in a situation in which animal test results become almost the sole criterion by which the "guilt" or "innocence" of any product or compond is established.

"I would not think of marketing a cosmetic product without carrying out many tests, including animal tests. They are a very important part of any medical screening program. I have lived long enough to know, however, that the extrapolation of any animal test results to human experience is a difficult exercise. It becomes a *reckless* exercise, in my judgment, when these extrapolations fly in the face of human experience. As Dr. Jonathan L. Hartwell, of the National Cancer Institute, in the introduction to his 'Survey of Compounds Which Have Been Tested for Carcinogenic Activity,' states:

> '. . . there are pronounced differences in the response of different (animal) species to the action of compounds carcinogenic in the case of the mouse.'
>
> '. . . some compounds which were negative in the mouse can induce tumors in other species . . .'
>
> '. . . In the mouse itself, it is abundantly evident that different tissues respond differently to the same compound.'
>
> '. . . in the monkey, none of the powerful carcinogens has been shown to produce tumors.'

"In view of these basic problems; and in view of such known influences as dosage (carcinogenic effects in animals can be lost by using too much as well as too little), mode of administration, the vehicle used, the sex, strain, and age of the animal, the diet—I can only conclude that we have a long way to go in the development of animal tests that will predict the susceptibility of man to particular carcinogens; and, indeed, his susceptibility to many far less complicated medical afflictions."

The basic questions about the relative validity of inhalation studies for chronic toxicity, Mr. Reed explained, are many: "When are such studies indicated? Should we carry them out on all preparations? Are animal tests a realistic guide to the exposure of compounds and products that may be carcinogenic in man? What do we do when established products are found to contain compounds that are carcinogenic in animals, when overwhelming human experience tells us they are safe? In the answers to questions such as these lie great confusion, with, I suspect, government, food, drug, and cosmetic scientists, all holding somewhat different views."

Mr. Reed cited, as prime examples of the scare philosophy of animal test extrapolation to humans, lipsticks and hair sprays. "After billions of lipsticks have been used for many years; after billions of human exposures to these products; and in the complete absence of any real human evidence that these dyes, as used in lipsticks, pose any significant health problem, we have declared them guilty based on animal test evidence."

Turning to the subject of hair sprays, in which his company has an important financial stake, Mr. Reed said: "Aerosol hair spray preparations have become a great part of the cosmetic industry. Roughly, this single product category is a one-hundred-million-dollar business. In a medical article published last year, after hair spray products had been in widespread usage since 1951, two cases were reported describing thesaurosis in two female subjects. In addition to reporting the case histories of the two patients involved, animal work involving three guinea pigs was also described. This report became the basis for tremendous publicity in the scientific and lay press that left the readers with the inevitable suspicion that hair sprays were harmful and might even cause cancer of the lung. Think of this—out of the female population of this country, two women plus three experiments with three guinea pigs—involving, incidentally, no control animals—and suddenly a cosmetic product is rendered medically suspect! This was a product whose safety had been established, not only by the cosmetic scientists who developed these products and the suppliers of the raw materials involved, but by the exposure of millions of women, billions of times, to this preparation. The price that the cosmetic scientists

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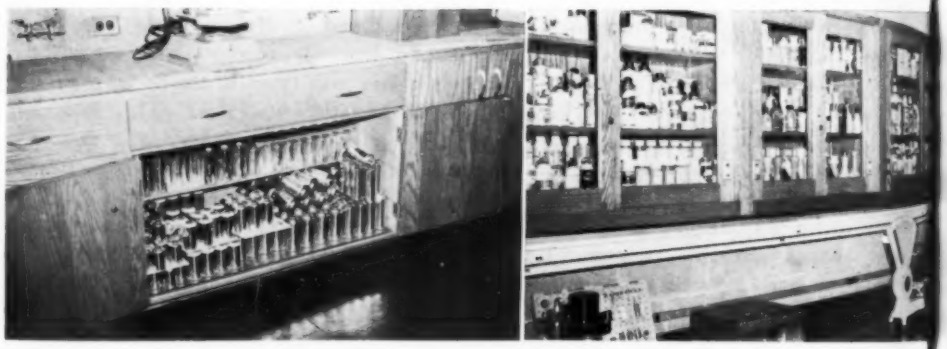
The "working area" of the St. John's laboratory, showing the aerosol filling equipment and some of the fine analytical instruments. In the wall cabinet at left may be seen propellant storage tanks.

New Aerosol Technical Courses Planned for St. John's Laboratory

Container storage is in the wooden cabinets, with the upper drawers reserved for valves. In the photo at right may be seen some of the considerable collection of marketed aerosol products.



A COURSE in aerosol technology for the pharmaceutical student, now part of St. John's University's graduate course, will become part of the undergraduate curriculum when the university's pharmacy college is converted from a four to a five-year course. This fact was revealed by Dr. John Sciarra, who heads the aerosol section of the college, in an exclusive interview with *Aerosol Age* last month.

Aerosol technology on an undergraduate level will be incorporated into the course as part of the senior year program, with five-year students studying it first in 1965, Dr. Sciarra revealed. The graduate course now, he said, is part of a larger section on "manufacturing pharmacy," and consists of six hours of instruction in the aerosol laboratory and three hours of straight lectures. Even at this early stage of academic preparation, Dr. Sciarra revealed, the St. John's undergraduate receives two to three hours of detailed instruction in basic aerosol technology.

But apart from the graduate and undergraduate courses open to St. John's students, Dr. Sciarra also revealed further plans to offer courses for aerosol industry chemists and technicians, in addition to the aerosol technology seminars scheduled for Thursday evenings, March 24 through May 5 (*Aerosol Age*, Jan., page 49). A summer and/or evening course offering credit toward a master of science degree will be incorporated into the St. John's curriculum, and this will be open to anyone in the industry with a bachelor of science degree. Three credits will be available through the lecture and three more through the laboratory.

Pivot for all the aerosol activity at St. John's University is the new aerosol laboratory located in Albertus Magnus Hall, the university's new science building located in Jamaica, Queens, near the Grand Central Parkway. Installed over the course of the past two years by Dr. Sciarra

(with the administrative help of Dr. Francis Mina, vice-president of Lodes Aerosol Consultants, Inc., New York), the fully equipped laboratory gives the students the facilities to cold or pressure-package a wide range of aerosol products. Also, it enables Dr. Sciarra and selected graduate students to do work on special research projects.

The laboratory, fixtures, and aerosol equipment were all bought out of science funds of the university. But all propellants, containers, valves, and perfumes, have been donated by companies manufacturing these components and materials. Present equipment includes a combination crimper and gasser, an ingredient filler, a conventional laboratory gasser (all made by Builders' Sheet Metal Works), plus a titrimeter for the determination of moisture, and various other advanced analytical instruments. A large stock of containers, valves, and propellants is naturally an essential part of the equipment, and the cabinets along one entire wall are filled with marketed aerosol products, most of them pharmaceuticals.

Students and student-researchers working in the aerosol laboratory are not restricted to the laboratory itself. Just across the hall is a large "manufacturing pharmacy" laboratory in which are kept mixers, tableters, colloid mills, ointment mills, sterilizers, and other laboratory-scale manufacturing equipment which is used to make ingredients to put into the test aerosol packages. Also available for more advanced study projects are the impressive facilities of the university's biology and chemistry departments. Everything from a simple pH meter to a costly infra-red spectrometer is available for use by Dr. Sciarra's aerosol group.

Apart from the courses in aerosol technology, probably the most impressive single aspect of the university's aerosol installation is the special basic and advanced research being done. Among the special projects currently being undertaken (the first two on grants) are:

1. A project, under a grant from the General Chemical Division of Allied Chemical Corp., to study the "Solubility and Stability of Medicinals in Aerosol Form." Francis Tinney, a graduate student, is doing the principal work on this, which is a study of aerosol formulation possibilities for some more common medicinals now dispensed in conventional form.

2. A project, under a grant from the Eli Lilly Co., to develop for aerosol packages specific medicinals to be given by inhalation therapy. This study is being conducted by Vincent Cannito, another graduate student.

3. A study project, being performed by undergraduate students, to determine the feasibility of the "Extemporaneous Compounding of Aerosol Prescriptions by Pharmacists in Drug Stores." This project is currently working on the idea of using special aerosol formulation kits, which, incorporated with equipment in the modern pharmacy, would enable the druggist to compound aerosol prescriptions quickly and safely.

4. A study to determine the stability and shelf life of aerosol pharmaceuticals packaged with compressed gas. This is also being worked on by undergraduate pharmacy students.

Dr. John Sciarra

Naturally, in all these projects the students are closely coached by Dr. Sciarra, who is justly proud of his aerosol laboratory and of the work it is doing. He attributes considerable credit for the success of the laboratory to Dr. Andrew T. Bartilucci, dean of the college of pharmacy, and to the board of directors of the college for their foresight in setting up the whole project.★

Fuller Brush Co. Dedicates New Plant

THE Fuller Brush Co., leading aerosol marketer and leader in door-to-door selling, last month dedicated a new $6.5 million plant covering seven acres on an 84-acre suburban site in East Hartford, Conn. Constructed by Walter Kidde Constructors, Inc., New York, it will employ nearly 800 persons and will provide facilities for administration, research and development, sales and warehousing and distribution.

The plant's manufacturing will comprise all of Fuller's brush and broom manufacture, manufacture and assembly of mops and related consumer goods, and a plastic injection molding operation. Major aerosol production facilities for the company are at a satellite plant in Albany, N. Y.

At official dedication ceremonies held Jan. 14, board chairman Alfred C. Fuller, and his son Avard E. Fuller,

(*Continued on Page* 92)

Studies of

PROPELLANT/GLYCOL SYSTEMS

THE solvent is an important factor in aerosol formulations. It brings together in a compatible solution the active ingredients and propellant. It affects the pressure and spray character and often the effectiveness of the product.

The wide variety of products which can be and are dispensed as aerosols require many different solvents for proper formulation. In many cases, a mixture of solvents is necessary to produce the best result.

Many different glycols, glycol ethers and polyglycols are commercially available today and are promising as potential aerosol solvents. To provide background information necessary for the application of these types of solvents, the "Freon" Products Laboratory has studied a number of combinations. Solubility and spray characteristics and vapor pressures of various solutions of propellants, glycols, and ethyl alcohol have been determined. This information will simplify the formulation of aerosol products containing glycols.

Systems Studied

Glycols, glycol ethers and polyglycols were included in the studies reported here. Combinations with the "Freon" propellants with or without the addition of ethyl alcohol have been investigated. Most of the glycols or glycol derivatives used were completely miscible in water. They are listed in Tables I, II, and III.

The propellants used were "Freon-12," "Freon-114," "Freon-12"/"Freon-11" (50/50) and "Freon-22"/"Freon-11" (30/70).

The solubility and spray characteristics and vapor pressures obtained for the various aerosol systems are shown on triangular coordinates (see page 28 for sample graphs). Most of the charts represent a solvent/propellant system composed of a glycol, absolute ethyl alcohol and propellant. The base line between the glycol and the propellant gives the properties of the glycol/propellant mixtures alone. Several charts give the properties of systems composed of propellant and two different glycols. A complete index of the charts is included.

Selection of Glycol

The selection of a specific glycol as a solvent for aerosol formulations will depend upon a number of factors. The glycol must have adequate solubility properties for the active ingredients and sufficient compatibility with the "Freon" propellants so that a satisfactory spray may be obtained. Toxicity considerations may eliminate some of the glycols for certain applications.

In products where the presence of ethyl alcohol is not objectionable, almost any glycol can be used in combination with ethyl alcohol to give a homogeneous aerosol formulation with satisfactory spray characteristics.

In some cases, propellant combinations rich in "Freon-11" may be desirable in order to utilize the good solvent characteristics of "Freon-11". The solubility data for such a propellant mixture may be estimated by interpolating between the given data for "Freon-12"/"Freon-11" (50/50) solution and "Freon-11" alone. The effect upon the phase boundaries and areas of acceptable spray characteristics that may be expected when the propellant ratio is varied from "Freon-12"/"Freon-11" (50/50) to "Freon-12"/"Freon-11" (30/70) may be observed with propylene glycol/ethyl alcohol systems by comparing Figures 3 and 4.

In formulating some products, it may be desirable to eliminate ethyl alcohol as a solvent. Table IV lists glycols that are completely miscible

TABLE I — SOLUBILITIES OF "FREON" PROPELLANTS IN GLYCOLS

Glycol	Propellant Solubility, Weight Percent				
	"F-114"	"F-12"	"F-12"/"F-11" (50/50)	"F-11"	"F-22"/"F-11" (30/70)
Ethylene glycol	< 1	< 1	< 1	6	6
Diethylene glycol	< 1	< 1	10	17	32
Triethylene glycol	< 1	< 1	12	19	32
Tetraethylene glycol	4	10	16	27	*
Propylene glycol	6	11	14	20	31
Dipropylene glycol	21	37	*	*	*
Tripropylene glycol	25	44	*	*	*
1,3 Butylene glycol	< 2	9	14	19	29
1,5 Pentanediol	< 1	10	17	20	26
Hexylene glycol	*	*	*	*	*
1,2,6 Hexanetriol	< 1	< 1	< 1	< 1	< 1
2-Ethylhexanediol 1,3	35	*	*	*	*

*Completely miscible.

*By Paul A. Sanders**

"Freon" Products Division Laboratory
E. I. duPont de Nemours & Co., Inc.
Wilmington, Del.

with the various propellants. For example, dipropylene glycol methyl ether, diethylene glycol butyl ether, and hexylene glycol are miscible with any of the listed propellants. The dipropylene glycol methyl ether appears to be an excellent solvent for aerosol formulations. It has a relatively low viscosity and is reported to be suitable for use in cosmetics and other products to be applied to the skin.

Combinations of glycols may be used with the propellants. Examples of combinations, such as dipropylene glycol methyl ether with propylene glycol or polyethylene glycol 400 were studied.

Glycols, such as propylene glycol and polyethylene glycol 400 that have been used extensively in cosmetic preparations, are difficult to formulate as aerosols with "Freon-12"/"Freon-11" propellants because the solubility is not sufficient to obtain a satisfactory spray. For most of these glycols, "Freon-22"/"Freon-11" (30/70) is an excellent propellant with high solubility in the glycols. For example, polyethylene glycol 400 is completely miscible with "Freon-22)/"Freon-11" (30-70) and may be used alone as a solvent without ethyl alcohol. Although "Freon-22"/"Freon-11" (30/70) is not completely miscible with propylene glycol, only a minor proportion of ethyl alcohol is needed to obtain a homogeneous system.

Some active ingredients may require the presence of water in the formulation to obtain sufficient solubility. Examples of systems of this type were studied with "Freon-12" as the propellant.

Solubility

Solubility properties of the propellant/glycol mixtures are indicated in the charts by the phase boundaries. Compositions to the right of the phase boundaries are single liquid phase systems in which all three components are mutually soluble. These are the compositions of principal interest for aerosol formulation. Compositions to the left of the phase boundaries are not mutually soluble and form two liquid phases. Phase boundaries for any propellant mixture may be estimated from the data that are given.

The intersection of the phase boundary at the base line between the propellant and glycol indicates the solubility of the propellant in the glycol alone. The solubilities of the various propellants in the glycols alone are listed in Tables I, II, and III. Solubility data for "Freon-11" alone have also been included, so that it is possible to determine the approximate solubility of any given propellant mixture in any of the glycols by interpolation.

As would be predicted from the solubility parameters and the Kauri-Butanol values (Ref. 1) for the propellants, "Freon-114" has the least solubility in the glycols and "Freon-22" has the greatest solubility. Glycols that are miscible with "Freon-114" in all proportions therefore are miscible with the other propellants. For easy reference, glycol and propellant combinations that are completely miscible in all proportions are listed in Table IV.

Solubilities were determined by the titration technique described in Ref. 2. Titrations were carried out in 4-oz. Wheaton coated bottles. Agitation was obtained with a Mag-

TABLE II — SOLUBILITIES OF "FREON" PROPELLANTS IN GLYCOL ETHERS

Glycol Ether	Propellant Solubility, Weight Percent				
	"F-114"	"F-12"	"F-12"/"F-11" (50/50)	"F-11"	"F-22"/"F-11" (30/70)
Diethylene glycol methyl ether	25	69	*	*	*
Diethylene glycol ethyl ether	19	40	72	*	*
Diethylene glycol butyl ether	*	*	*	*	*
Dipropylene glycol methyl ether	*	*	*	*	*

*Completely miscible.

TABLE III — SOLUBILITIES OF "FREON" PROPELLANTS IN POLYGLYCOLS

Polyglycol	Propellant Solubility, Weight Percent				
	"F-114"	"F-12"	"F-12"/"F-11" (50/50)	"F-11"	"F-22"/"F-11" (30/70)
Polyethylene glycol 200	< 1	11	16	27	*
Polyethylene glycol 400	< 1	12	21	41	*
Polyethylene glycol 600	< 1	13	23	47	*
Polypropylene glycol 150	22	40	*	*	*
Polypropylene glycol 425	50	*	*	*	*
Polyglycol 11-80	31	59	*	*	*
Polyglycol 11-100	38	*	*	*	*
Polyglycol 15-100	17	31	60	*	*
Polyglycol 15-200	21	38	*	*	*
Methoxy polyethylene glycol 350	12	26	59	*	*

*Completely miscible.

* Presented at the 46th annual meeting of the Chemical Specialties Manufacturers Association on Dec. 9, 1959 at Washington, D. C.

Mix agitator using "Teflon" coated magnets. Proportions of the components were adjusted so that the bottle was essentially full at the end of the titration in order to avoid any significant error resulting from the propellant in the vapor phase.

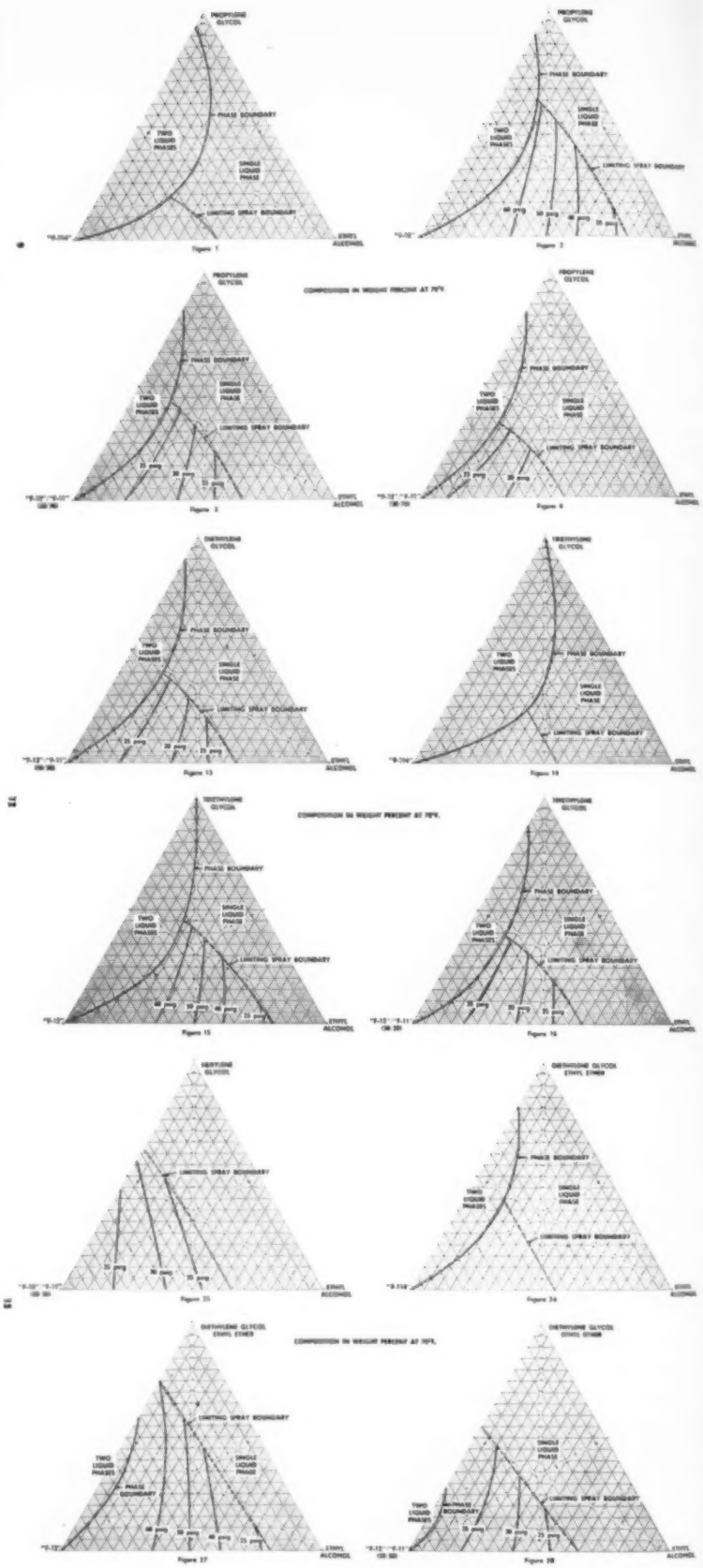
Spray Characteristics

As a further aid to formulation studies, areas of acceptable spray characteristics were established for each aerosol system by determining the limiting spray boundary. This boundary represents compositions that give borderline spray properties with aerosol valves with standard actuators. Compositions on the limiting spray boundary give extremely wet sprays or partial streams. Compositions to the right of the boundary will stream.

In charts where the glycol is not completely miscible with the propellant, the area of acceptable spray characteristics is defined by the phase boundary, the limiting spray boundary, and the base line opposite the glycol. Compositions having the wettest sprays are those in the neighborhood of the limiting spray boundary. As the proportion of propellant is increased so that the compositions approach the propellant apex, the sprays will become increasingly fine. The type of spray that a given composition will produce can be judged approximately by the position of the composition in the area of acceptable spray characteristics.

When the glycol is miscible with the propellant, the area of acceptable spray characteristics is defined by the two base lines and the limiting spray boundary.

The limiting spray boundary is, of course, a very nebulous line. The line of demarcation between an acceptable wet spray and a nonacceptable spray is not sharp. Furthermore, the type of valve used will have an appreciable influence upon the spray characteristics and tend to shift the limiting spray boundary. With mechanical break up valves, for example, the limiting spray boundary would be shifted to the right. The addition of active ingredients may have con-



INDEX FOR TRIANGULAR COORDINATE FIGURES*
Aerosol System

I. "Freon" Propellant/Glycol/Ethyl Alcohol Combinations

Figure No.			
1.	"F-114"	Propylene Glycol	Ethyl Alcohol
2.	"F-12"	Propylene Glycol	Ethyl Alcohol
3.	"F-12"/"F-11" (50/50)	Propylene Glycol	Ethyl Alcohol
4.	"F-12"/"F-11" (30/70)	Propylene Glycol	Ethyl Alcohol
13.	"F-12"/"F-11" (50/50)	Diethylene Glycol	Ethyl Alcohol
14.	"F-114"	Triethylene Glycol	Ethyl Alcohol
15.	"F-12"	Triethylene Glycol	Ethyl Alcohol
16.	"F-12"/"F-11" (50/50)	Triethylene Glycol	Ethyl Alcohol
25.	"F-12"/"F-11" (50/50)	Hexylene Glycol	Ethyl Alcohol

II. "Freon" Propellant/Glycol Ether/Ethyl Alcohol Combinations

26.	"F-114"	Diethylene Glycol Ethyl Ether	Ethyl Alcohol
27.	"F-12"	Diethylene Glycol Ethyl Ether	Ethyl Alcohol
28.	"F-12"/"F-11" (50/50)	Diethylene Glycol Ethyl Ether	Ethyl Alcohol

siderable effect upon the spray characteristics. Nevertheless, the limiting spray boundary should be a helpful guide in formulation and should eliminate the preparation of many unnecessary formulations.

Aerosol formulations with propellants and glycols alone may bubble slightly after discharge because of the viscosity of the glycol and entrapment of some propellant. The bubbling, however, is only momentary and should not present much of a problem. If it is considered undesirable, it may be eliminated by the addition of a small amount of ethyl alcohol. No bubbling was observed with combinations of propellants and dipropylene glycol methyl ether. This particular glycol has a relatively low viscosity.

Pressure

Approximate vapor pressures of the various propellant/glycol solutions are indicated on the charts by vertical contour lines. Compositions with "Freon-12" as the propellant have contour lines showing pressures of 60, 50, 40 and 25 psig at 70°F. Contour pressure lines of 35, 30, and 25 psig are shown for "Freon-12"/"Freon-11" (50/50) propellant compositions. Vapor pressures of compositions falling between the contour lines may be estimated by interpolation. Data for the propellant alone, including mixtures of "Freon-12" with "Freon-11" and "Freon-12" with "Freon-114", are available in Ref. 3.

Vapor pressures of glycol solutions with propellant mixtures other than those used in the present study may be approximated by interpolation. The vapor pressures of compositions containing "Freon-114" as the propellant were not measured since they would be expected to be relatively low in all cases.

Samples for vapor pressure measurements were prepared by cold filling. The concentrates were cooled to —4°F and the propellants were cooled to a few degrees below their boiling points. After filling, the containers were allowed to warm up slightly until vaporization of the propellant indicated that purging of air from the containers was essentially completed. The containers were then capped. The gage was prepressurized with the sample to be tested. The samples therefore contained very little air in the vapor phase and the pressures are probably slightly lower than those resulting with commercial loading procedures.

Toxicity

The selection of a suitable glycol as a solvent in aerosol formulations will depend not only upon such prop-

(*Continued on Page* 95)

TABLE IV — GLYCOLS COMPLETELY MISCIBLE WITH VARIOUS "FREON" PROPELLANTS

"Freon-114"

Diethylene glycol butyl ether
Dipropylene glycol methyl ether
Hexylene glycol

"Freon-12"

Diethylene glycol butyl ether
Dipropylene glycol methyl ether
2-Ethylhexanediol 1,3
Hexylene glycol
Polyglycol 11-100
Polypropylene glycol 425

"Freon-12"/"Freon-11" (50/50)

Diethylene glycol methyl ether
Diethylene glycol butyl ether
Dipropylene glycol
Dipropylene glycol methyl ether
2-Ethylhexanediol 1,3
Hexylene glycol
Polyglycol 11-80
Polyglycol 11-100
Polyglycol 15-200
Polypropylene glycol 150
Polypropylene glycol 425
Tripropylene glycol

"Freon-22"/"Freon-11" (30/70)

All glycols in Tables I, II, and III except the folloying:
Ethylene glycol
Diethylene glycol
Triethylene glycol
Propylene glycol
1,3 Butylene glycol
1,5 Pentanediol
1,2,6 Hexanetriol

**Editor's Note*: Since there were 76 triangular coordinate figures in the original paper by Mr. Sanders, the dictates of space have necessitated the publication of only a representative sample of the figures. Readers wishing to obtain the complete set may obtain them by writing DuPont's Freon Products Division, Wilmington 98, Del. or by consulting the CSMA Meeting Proceedings.

Good Weather, TV Advertising Spur 1959 British Aerosol Sales

By A. Herzka, B.Sc., A.R.I.C.
Pressurized Packaging Consultants, Ltd.
London, N.W. 11, England

THERE is little doubt that 1959 was the best year the British pressurized packaging industry has had yet. Although no official figures are available, it is generally conceded that the year's total output can be taken as 25 million units, a 50% increase over 1958 and more than double the 1957 output. This increase in sales was undoubtedly aided by the excellent summer weather and by extensive television advertising, but there is no question that the price reduction which took effect early in the reason contributed greatly. While the better known and advertised brands of insecticides and air fresheners remained at the 4/6 (63 cents) level (per six oz. can) for most of the season and then partially dipped to 3/9 (52 cents), similar products sold in multiple stores, chain chemists and off market stalls very soon dropped to 2/6 (35 cents) each, in isolated instance even to 2/ (28 cents)—or 1/11. (26 cents).

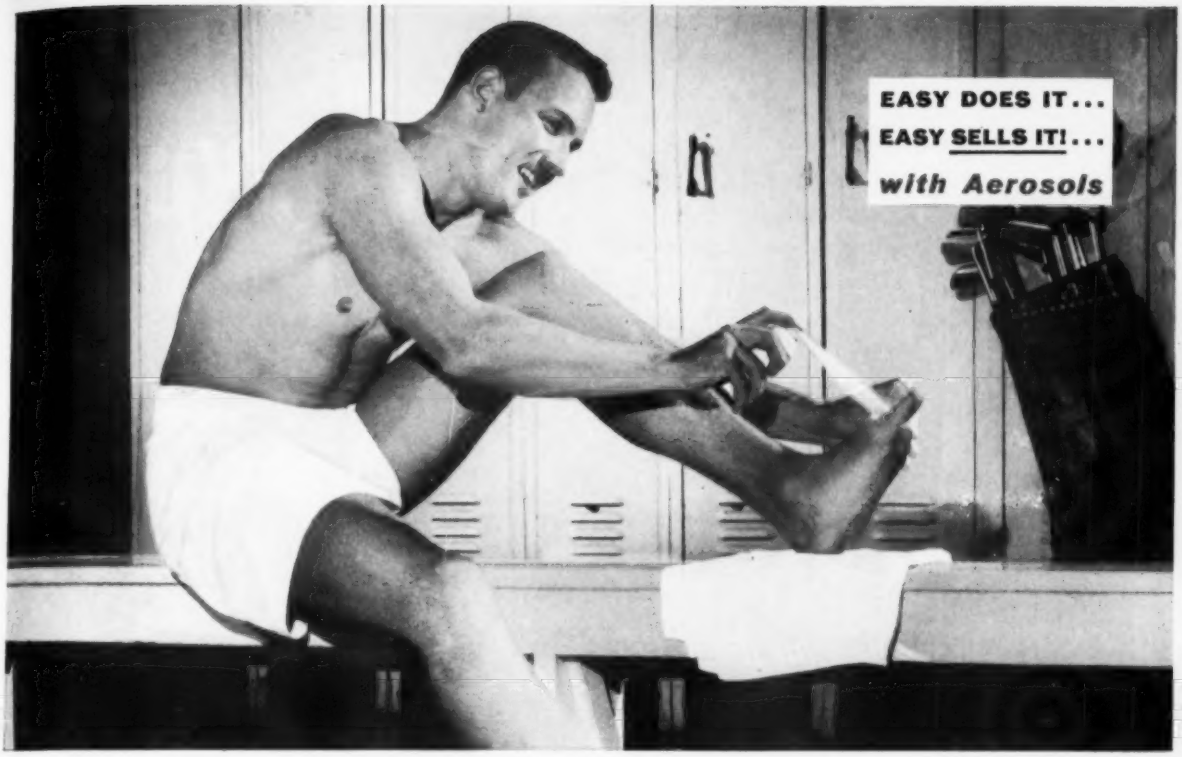
But quantity, and price, were not the only features of the past season, which was studded with a number of firsts all of which are worthy of individual mention. At the beginning of the year, the "Presfil" range of filling equipment was launched by M. Callaway (HR), Ltd. of Lindon. The Presfil itself is the first machine which carries out three stages of filling in one operation, viz. the air in the dispenser is evacuated, product followed by propellant is filled. Any one or two of these operations can be cut out at will. The improvements which have been made in this machine during the past year have turned it into the simplest pressure filling machine in the world, ideal for new entrants in the industry (Photograph 1).

Two new developments have taken place in the container field. The Metal Box Co., Ltd. produced the first bulged aluminum container, specially designed for the "Polybactrin" antibiotic powder spray of Calmic, Ltd., of Crewe. The bulging follows the contours of the previously used glass container and thus contribues towards the ease of handling (Photograph 2).

The six-ounce aluminum "monobloc" containers have now made their appearance and these are manufactured exclusively in Great Britain by Universal Metal Products, Ltd., of Salford, Lancs. A spray for protecting shoes and handbags to prevent rain marking the surface, is the first product to be marketed in these containers, by two well known shoe concerns—Lilley & Skinners and Saxone, under the trade mark "Raincheck." These containers should prove a boon for those products which are very searching and tend to leak through the bottom seams of conventional two-piece and three-piece containers (Photograph 3).

From a product standpoint, the newest development occurred in the autumn—the marketing of a food product. The first product was "De-Lite" chocolate paste, manufactured in Holland by Blooker's Cacao en Chocoladefabrieken, N. V., Amsterdam, and imported into Great Britain. Retailing at 6/6 (91 cents) each, this product utilizes a 16-ounce three-piece tinplate can by Crown and the Precision stream valve, with nitrogen as propellant. Hard on the heels of "De-Lite," followed the importing and marketing of "Qwip," the well known table cream whip manufactured by Avoset Co., Oakland, Calif. "Qwip" is thought to be selling exceedingly well and must have proved a great boon at Christmas parties. However, the credit for the first British-manufactured food product goes to Proprietary Pressure Packages, Ltd. of Birmingham, who launched "Dry Fry," a vegetable spray which prevents food from sticking to cooking surfaces. The liquid is sprayed on to frying pans or other utensils and used in the place of oil and cooking fats for greaseless frying, baking, broiling, etc. It is claimed that "Dry Fry" adds no calories to foods. Metal Box six-ounce tall tinplate containers, fitted with QG valves (by Specialty Valves, Ltd.) are used in this product which has found ready consumer acceptance.

Shortly before Christmas, quick-frozen Devonshire cream was put on the market by Upton Farm Dairy, Ltd., of Brixham, Devon. This product also uses a six-ounce tinplate container, internally lacquered, and a Precision valve equipped with the U. S. inspired upside-down actuator. Nitrous oxide is the propellant and the retail price



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Last year, pharmaceuticals were the fastest growing of all aerosol product groups—showing a sales increase of 50% in 1958 over 1957, compared to a 20% increase for all aerosols. And the market is still growing fast. It is expected that sales will reach $200 million by 1961!

Right now's the time to plan on capturing your share of the booming aerosol pharmaceutical market. And to help you get started in aerosol packaging of your medicinal product, General Chemical offers many valuable services.

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As an extension of its own aerosol research and development program, General Chemical has initiated a grant-in-aid program at a large eastern college of pharmacy expressly for the study of pharmaceuticals in aerosols. Such research on all phases of pharmaceuticals as aerosols will help accelerate development of many new products. Also, advance research in our aerosol laboratories has led to the development of typical formulations for a number of new or improved aerosol products. These are available to interested marketers.

Contract Fillers

We will also be glad to put you in touch with highly capable contract fillers, who can put up small test runs for you or handle full-scale commercial production. They will work with you from planning and testing through to volume filling. You don't have to invest a cent in equipment or production personnel when you work with these contract fillers!

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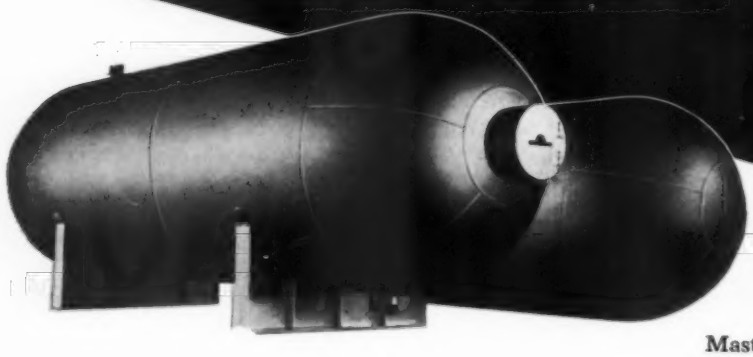

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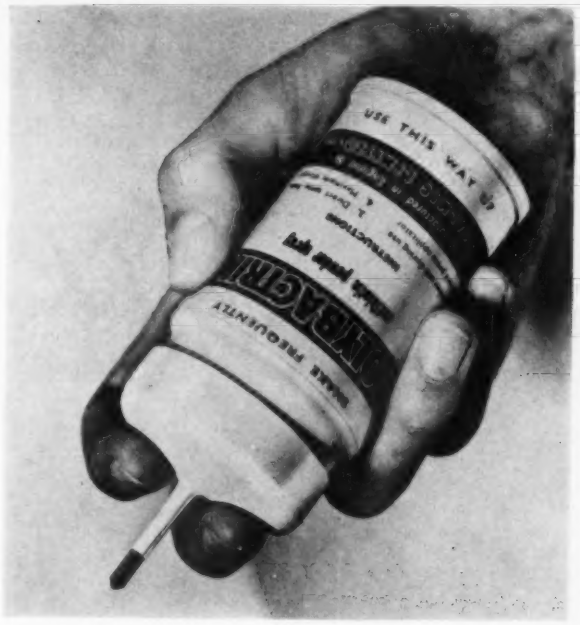
is 3/11 (54 cents). In order to avoid unsightly rusting during storage in the deep freeze cabinets, containers are individually wrapped in polythene bags. Quick freezing of the product was resorted to in order to overcome the storage difficulties which would be encountered otherwise. Upton Farm Dairy, Ltd. are to be congratulated on pioneering the marketing of a pressurized whipped cream, probably the first one in Europe.

Among the hosts of new products marketed in the past season are "Vi-Daylin" vitamin syrup by Abbot Laboratories, Ltd. of London in six-ounce tinplate containers with Precision stream valves (both by Metal Box) and propelled by nitrogen. A whole range of household products has been marketed by Durazone (Sales) Ltd., of London. "Sprayclean" spot remover is in this line, and this all-liquid preparation is presented in a most attractively decorated aluminum container.

Pressurized packs were also featured in a number of exhibitions. At the Packaging Exhibition, in September, the stands of the Aerosol Packaging Co., Ltd., and of the Midland Aerosol Group of companies were devoted exclusively to aerosol packs. Betts & Co., Ltd., a member of the Cortaul Group, displayed their range of aluminum containers. Through their activities, the number of manufacturers of aluminum containers in Great Britain has risen to five. The Metal Box Co., showed container and valves, John Dale, Ltd. showed aluminum containers, and plastic containers were featured by Cascelloid, Ltd.

Photograph 3. The new aluminum monobloc container for "Raincheck," a water repellent.

Photograph 2. The new metal package for Calmic's "Polybactrin" powder spray replaces a coated glass container.



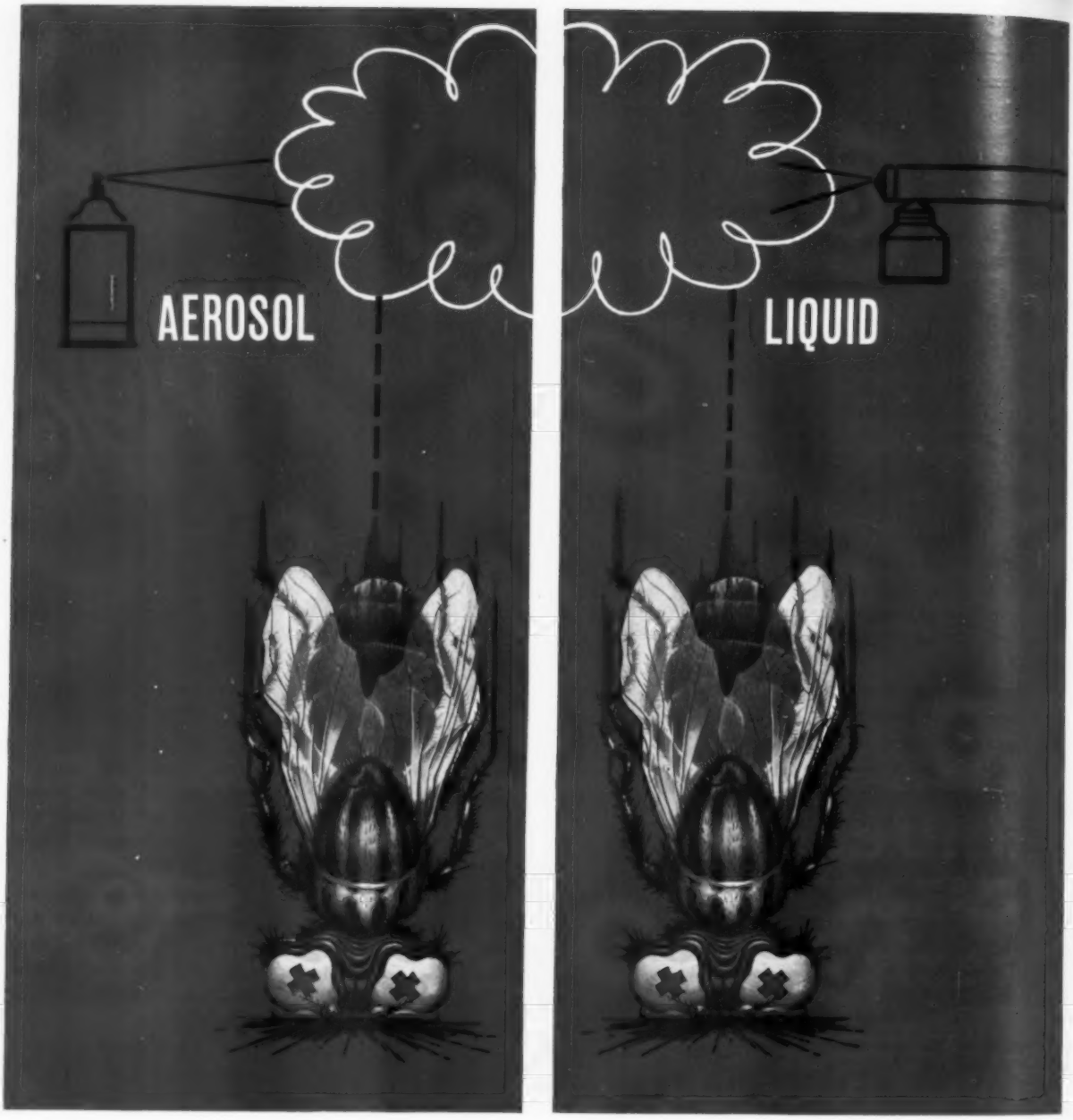
At the Bakery & Confectioners Exhibition, in October, a corner of the stand of the Milk Marketing Board was devoted to publicizing pressure dispensed whipped cream. This display was organized by Dr. W. G. Wearmouth, of the National Institute for Research in Dairying, Reading, Berks with the active cooperation of the suppliers of cream, containers, valves and propellants. Visitors to the stand were given free samples of pressure dispensed whipped cream and great interest was aroused by this display.

By way of contrast, *no* pressurized food products were to be seen at the National Dairy Show (also held in October), though pressure packs were featured very prominently on at least three stands. The stand of Walter Gregory & Co., Ltd., Wellington, Somerset, the well-known manufacturers of animal husbandry products, was a replica of a typical West Country farm house and all of their 17 packs for farmstock and farmhouse were displayed. Amongst these are "Orf," for the treatment of contagious pustular dermatitis, and "Sealquick," a transparent antiseptic plastic dressing for spraying on wounds and for sealing the teats of dry cows.

Another firm of manufacturing veterinary chemists, Osmond & Sons, Ltd., of Grimsby, displayed their 13 different products very prominently, and yet a third firm, H. E. Helman & Co. (Insecticides), Ltd. of Culverstone, Kent, displayed "Spray-Mite" poultry insecticide, the use of which makes it unnecessary to resort to costly debeaking which often retards young stock.

1959 was altogether a very momentous year, and the indications are that 1960 will be no less eventful. Prices are continuing at a low level, and the majority of marketers of insecticides and air fresheners and similar products are tailoring their six-ounce packages to a retail price of 2/6 (35 cents). The reduced margins, resulting from such a policy, are causing many small as well as large firms to undertake their own filling.

Tinplate containers are expected to become available from a second supplier, and one of the manufacturers of aluminum containers is promising to supply the same at a price comparable to that charged for tinplate. Other developments expected are two-piece aluminum containers with hidden bottom seams and stronger side seams for built-up tinplate containers. Miniature containers are bound to come to the fore, and glass containers should be selling better than ever.★



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PLASTIC AEROSOL CONTAINERS

Typical containers made by the author's company.

How important a factor will they become in the future?

By Lewis L. Otterson

Sales Manager
Bernardin Bottle Cap Co.
Evansville, Indiana

ARE plastics going to become a major factor in packages for aerosol products?

That question is being pondered in many firms that have a growing interest in the industry — it's being asked in the laboratories, in executive offices and by merchandising departments. A large segment of the aerosol industry believe the answer is yes—and is showing its confidence by investing many thousands of dollars in plastics development for this purpose. In the foreseeable future this investment could mushroom into millions of dollars.

What, then, is the status of plastic aerosols? Where do they stand now? Why do they seem to offer such a bright future?

Many articles have been written about the technical aspects of plastic aerosol containers. In this article, an attempt will be made to summarize what is occurring in the field—both in the labs and in the merchandising ends.

At the present time, there are at least 100 firms with consumer products that are actively testing aerosol products in plastic containers. These range from small, one-product specialty firms, to the giants. This work encompasses colognes, perfumes, hair sprays, cosmetics, disinfectants, medicines—pretty well across the board in the non-food aerosol business.

It is felt by many industry observers that this work will lead to some major product lines being introduced in plastic aerosol containers in the immediate future — with the promotion and sales effort necessary to assure their success.

Why this interest in plastics? What can they offer that is not already available?

The answer is: *design*. Because of the unique molding qualities of plastics, they offer design possibilities available in no other type of containers. Special shapes, a full spectrum of colors, unusual finishes—all can be produced in the mold with a minimum of finishing operations.

The looks, the "feel," the hard surface—all spell distinctiveness and class.

Another important factor is cost. With plastics now available, there is every reason to believe that a high volume plastic container can be less expensive than other materials in sizes of less than three ounces. In the three to five ounce sizes, they are competitive with vinyl-coated glass packages.

The historic price trend of plastics forecasts an even better price picture for the future. Plastics generally are becoming *less* expensive while most other materials are increasing in price.

Corrosion resistance also is very high in plastics, making this material of special interest for products that are hard to hold in metal containers.

Because of their light weight, plastics also offer substantial savings in freight. Their toughness and "bounce" are of major interest, too.

Several types of plastic bottles already have been produced on a limited scale. These include melamine and nylon containers. A new addition now is Delrin.

Current interest by manufacturers centers on nylon and Delrin. These two materials are undergoing exhaustive tests by potential users, bottle producers and raw material suppliers. Of the currently available materials, they seem to offer the greatest possibility of high volume production.

With the rapid strides being made by plastic suppliers, it is not unreasonable to assume that many other plastics will soon be available that will make ideal aerosol containers.

One of the major drawbacks to widespread use of plastics for aerosol containers is lack of specific knowledge by packagers. The present activity of packagers, plus the work being carried on by both raw material suppliers and the bottle producers, should overcome this deficiency in short order. The Chemical Specialties Manufacturers' Association also is

(Continued on Page 96)

Let's look at your cosmetic aerosol fragrance problem from every angle!

In custom-creating a fragrance for your cosmetic aerosol, Givaudan examines your problem from *every* angle—perfume efficacy and consumer acceptability...types of propellents...pressure...solubility...compatibility...container material...cost and other factors.

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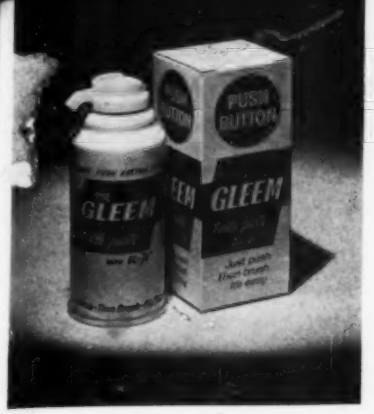


First aerosol toothpaste to be marketed in a carton is **Gleem,** a product of Procter & Gamble, Cincinnati. Prime motivation behind carton is shelf stacking feature, easier price marking, and additional protection offered against tampering with dust cap.

With a view toward capitalizing on its investment in the mushrooming sport of bowling, The Brunswick-Balke-Collender Co., Chicago, has introduced a line of aerosol touch-up paints for use by bowling alley operators. Line included an enamel and a paint, is packaged by Sprayon Products, Inc., Cleveland, custom filler and employs a Newman-Green valve. 16-ounce container is priced at $1.50.

Meti-Derm Spray. Schering's topical dermatological medication, has been introduced in Italy by Societa Italiana Prodotti Schering, Milan, Schering Italian licensee, in a coated-glass bottle (made by Bormioli-Plastica, Parma) with valve and actuator by Solfrene, S.p.A., Risdon licensee.

Crawlz No More, an aerosol tree banding compound, is a new product of National Bird Control Laboratories, Skokie, Ill. Packaged in a 14-ounce American Can container, it is equipped with a Precision valve and employs "Freon" as the propellant. Gene Rose Co., Chicago, is the custom filler.

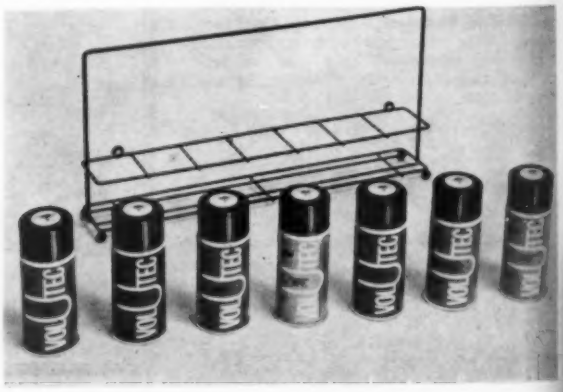
NEW PRODUCTS AND PACKAGES

Instant Mystic Foam is a new spot remover marketed by Dumas Milner Corp., Jackson, Miss. Continental Can container uses a Precision foam valve and Sterling Seal overcap. Aerosol Corp. of the South, Arlington, Tenn. is the custom filler.

Perma Shine Shoe Spray is a new product of Podiatry Laboratories, New York. Non-lacquer product will be sold in post exchanges for all U. S. military installations in the U. S. Retailing at 99 cents, eight-ounce container carries a label guaranteeing against cracking or peeling of the leather.

Pantho-Foam, a topical to ease inflammation, itching, and allergy, is a new product of the Arlington-Funk Laboratories Division of U. S. Vitamin & Pharmaceutical Corp., New York. Product containing hydrocortisone and pantothenylol, is packaged in a two-ounce Wheaton coated bottle.

A new line of aerosol products, including two deodorants, an ant and roach killer, a house and garden killer, and a garbage can deodorant, has been introduced by Camp Chemical Co., Brooklyn.



Volutec Laboratory Sprays are aerosol reagents for use with chromatographic devices. Schuco Scientific Division of Schueler & Co., New York, is the marketer of the line, which includes ninhydrin in acetone and butanol; Isatin; Bromcresol Green; Ferric Chloride; p-Anisidine Hydrochloride, and Aniline Hydrogen Phthalate.

Peerasol*

containers

*Tradename of aerosol containers manufactured by the Peerless Tube Company

Peerasol

the smartly fashioned container

Peerasol, the distinctive, seamless aluminum aerosol container, is the result of extensive research into the pressure packaging requirements of marketers of drug, cosmetic, pharmaceutical, toiletry and food products.

This lightweight, unbreakable container is deliberately designed to meet the needs of products that better serve the consumer in the smaller pocket or purse size package. This could mean a hair spray, nasal or throat spray, a cologne or a deodorant.

These types of products are usually carried in purse or pocket. As a result there should be no leakage or breakage of the package. Peerless solved the leakage problem by eliminating the causes, namely, the seams and at the juncture of the container opening and the valve cup. The extruded one-piece, seamless construction of Peerasol and the assurance of a precise valve cup fit as a result of a patented manufacturing process has placed Peerless in a position of leadership in the development and manufacture of the smaller size aerosol container.

The Peerasol container has a high fashion appeal because of its small size and the attractive, high-quality lithographic methods used in decorating the package in one to four colors over a base coat.

Peerasol is another development of the Peerless Tube Company, a pioneer in the manufacture of collapsible metal tubes as a package for commercial use. Peerless can rely on more than a half a century of experience and know how in the field of consumer packaging in creating and producing the aerosol package to fulfill the needs of manufacturers of drug, cosmetic, pharmaceutical, toiletry and food products.

Peerasol containers are used for a wide variety of products

More and more drug, cosmetic, pharmaceutical and chemical specialty products, both new and old, are found in a Peerasol container, the modern package for today's marketing and merchandising techniques.

He

Peerasol—sizes and capacities

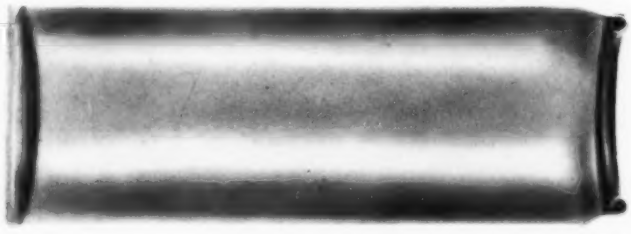
Diameter × Length	Fluid Ounces	C.C.
7/8" x 2 9/32"	1/2	14.8
7/8" x 3"	3/4	22.2
1 1/4" x 4 1/32"	1 4/5	53.3
1 3/8" x 2 1/2"	1 4/5	53.3
1 3/8" x 3"	2	59.2
1 3/8" x 3 3/16"	2 1/4	66.7
1 1/2" x 4 3/16"	3	88.8
1 1/2" x 4 11/16"	3 1/2	103.6
1 1/2" x 5"	3 3/4	111.0
1 1/2" x 5 5/16"	4	118.4

Note: Capacities shown are approximate fill capacities. Standard openings for 7/8" diameters are 20 millimeters and all others are standard one inch openings.

Inside coatings

Long a pioneer in the internal coating of collapsible metal tubes, Peerless has drawn on this heavy experience to perfect protective internal coatings on Peerasol containers. In addition, Peerless has perfected coating processes using phenolic and epoxy-type resins. These Peerless methods assure complete coatings, even under the beaded neck of the container.

The cutaway shows the beaded neck created by the Peerless patented process, U.S. Pat. 2856102. This is the feature that assures tight valve cup fit to prevent leakage. The Peerless Tube Company is the originator and sole licensor of this manufacturing process.



Exterior finishes

Plain Containers have no decoration. These containers are generally used when the manufacturer attaches his own paper label, or for prescription-type product packages, or when a decorated package is not required.

Coated Containers are provided in a single coating of white or attractive colors to enhance the appearance of the plain finish for general or private use or for prescription purposes.

Decorated Containers are produced in high quality one to four color lithography from your own package designs or those created by our creative staff. All colors are applied over a base coat. Simplicity of design and lithography makes the most effective sales package and most marketers are now decorating in simple, two-color designs. Original designs, special drawings and plates are billed to you at actual cost.

Peerasol containers can be coated with a highly resistant lacquer to protect the finished package against alkalies or acids at small additional cost. The latest and best enamels providing high color retention and chemical resistance are in daily use on our production lines.

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Peerless Tube Company, Bloomfield, New Jersey

Printed in U.S.A.

Here is the Peerasol story...tear out and save
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Today, millions of controlled-sprays later, PARFUMS CORDAY is the first to adapt the metered valve to their complete line of spray colognes for 1960. Their New TRAPEZE SPRAY COLOGNE CONCENTREE, with its stunning silver-crested glass flacon and EMSON metered valve, features finger-tip control, measuring just the right amount of exciting scented mist of over 1000 generous applications.

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(Angelique photo)

Chlorinated Hydrocarbons in Cosmetic Aerosols

By Dr. Hans Kuebler
Rheinfelden, Germany

CHLORINATED hydrocarbons as pressurizing media for aerosol-packaged products were mentioned in the first patent on the subject issued to Eric Rotheim of Oslo, Norway in 1927[1]. All of these compounds are noted for their solvent properties, an all-important consideration in cosmetic products. The solvents must be suitable not only for general application—with a wide variety of products—but also must be compatible with them and as free as possible from odor.

The Rotheim patent also mentions carbon tetrachloride as a possible energizing product. However, because of its odor and restricted compatibility, it would obviously find very little use in present-day aerosols. Carbon tetrachloride has a MAC value of 25, the top of the range being 1000. (As used in this article the MAC-value — Maximale Arbeitsplatz-Konzentration — is the number of ccm of evaporated material, in 1 ccm of atmosphere, which an industrial worker can safely inhale, without any ill effects, over an eight hour period.)

Although Rotheim's patent was amazingly complete for its time, it did not mention methylene chloride. This chloride compound, which can be used with good results as a solvent and propellant component, is more fully discussed below. The patent did, however, mention two other members of the chloride family — methyl chloride and vinyl chloride—both of which are good solvents, with boiling points of 24° and 13°, respectively. In many countries where the aerosol industry is widely developed, vinyl chloride has taken its place as a suitable propellant; whereas methyl chloride, lacking certain essential properties, has failed to gain acceptance. Although the MAC value of methyl chloride is 50 and it has only a slight odor, it is known to have a deleterious effect on the nerves, liver, and kidneys. It therefore has no practical aerosol application.

From the methane branch we should consider chloroform and methylene chloride. Chloroform immediately excludes itself on account of its heavy narcotic properties and strong odor. Methylene chloride, on the other hand, has many properties which make it highly suitable, particularly as a diluent for propellants.

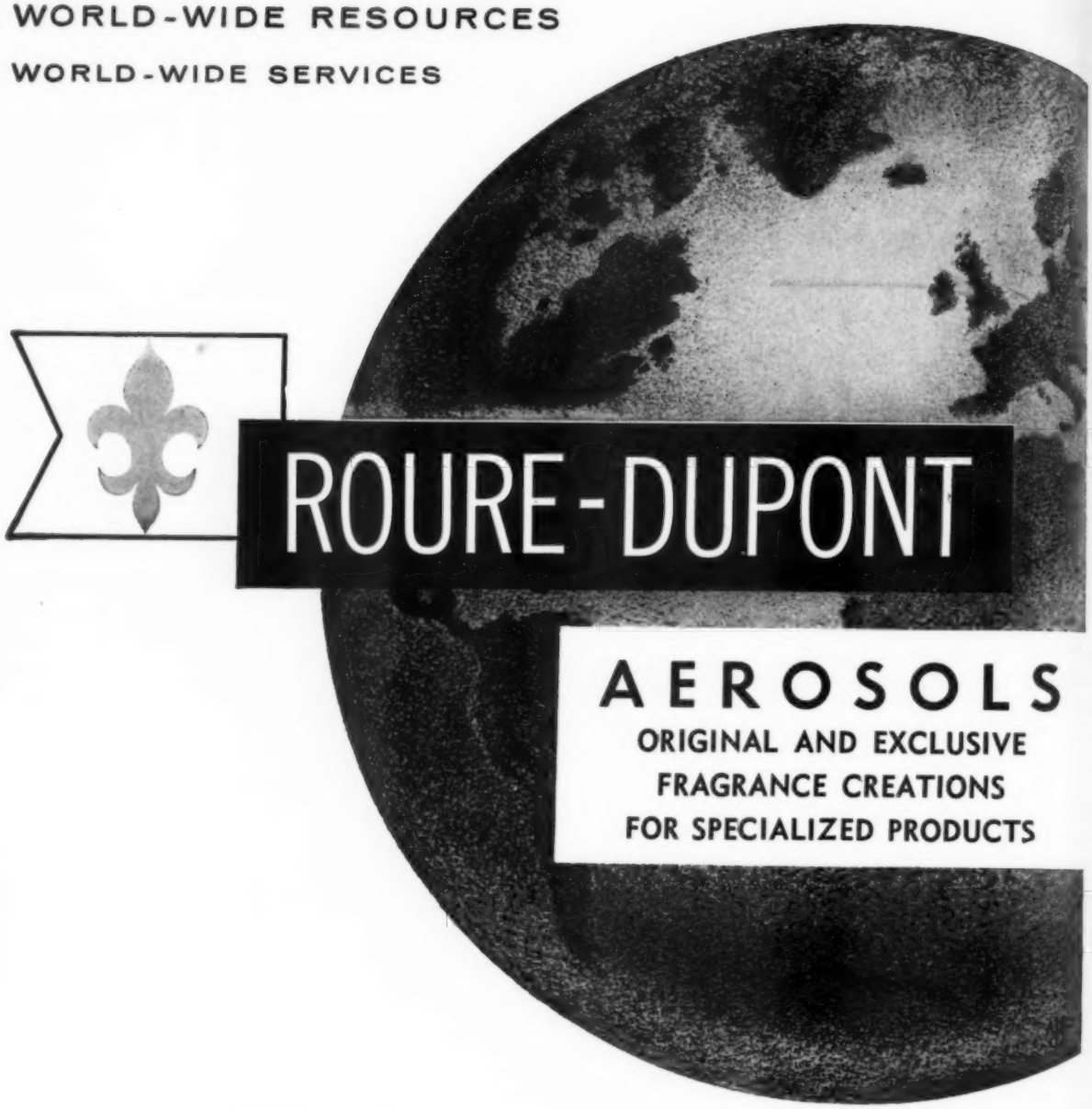
As noted in *Aerosol Age*[2], methylene chloride already has achieved wide acceptance in the U. S. aerosol industry: "It is now used by various manufacturers in a variety of non-aqueous products including insecticides, room deodorants, moth proofers, snows, paints, oven cleaners, and paint removers." Again from the same article: "In the formulation of room deodorants, methylene chloride has many useful applications. Its excellent solvent action for many insecticides, perfumes, oils, fats, waxes, and resins may be used to speed the preparation of many types of non-aqueous formulations."

As to its physical properties, methylene chloride is a colorless, non-flammable liquid, non-miscible with water, and with only a slight and easily masked chloroform odor. It has a boiling point of 40°C. and a melting point of 97°C. It has a broad application in the synthetic fields of rubber, polyvinyl chloride, polystyrene, polyvinyl ester, fats, waxes. It is widely used instead of ether for pickling, and as a rust removing, cleaning, and spot removing agent.

Before considering its special applications as a propellant diluent for pressure packages, a more thorough analysis of its physiological properties is in order. In MAC value it is much less narcotic than chloroform. It has a specific MAC value of 500, that is, 1 ccm of atmosphere containing 1.9 grams of methylene chloride vapor can be safely inhaled for hours without any bodily harm. This conclusion is based on extensive tests on rats, dogs, and rabbits at this concentration for seven hours daily over a six-month period. It follows that the average room space of 50 ccm could temporarily contain about 900 grams of vaporized methy-

WORLD-WIDE RESOURCES

WORLD-WIDE SERVICES



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AEROSOLS

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lene chloride without injury to the human organism. As the average sized aerosol can has a maximum content of about 20% methylene chloride—that is, about 67 grams in a 12-ounce can—it would be necessary to discharge completely and at one time 13 of such cans in such an area to reach the danger point. It is apparent that this condition would never be realized in actual practice.

It is noteworthy that all scientific literature characterizes methylene chloride as having a very low toxicity and being not particularly harmful to the liver. In industrial practice, as noted above, where it is widely used as a solvent, it is recognized as being the *least* harmful of all chlorinated hydrocarbons.

In the aerosol field, methylene chloride has three important applications:

1. As a solvent for the products mentioned above, as well as many others.
2. As a co-solvent for a variety of active products not compatible with the basic propellant employed.
3. As a propellant component. With its boiling point 16°C., higher than that of propellant 11, it can be used as a substitute for this propellant in the customary propellant mixtures[3]. A mixture of 30% methylene chloride and 70% propellants 11 and 12 — 10 to 90 — yields approximately the same internal pressure as a mixture of propellants 11 and 12—50 to 50—i.e., about 3.5 atmospheres (p.s.i.g.) at 20°C.

When methylene chloride is used in aerosol formulations it is necessary to observe carefully two conditions. First, the formulation must be as water-free as possible, since this chlorinated hydrocarbon (with a hydrolization factor of 55 grams per liter per year) tends to hydrolyze easily. This generation of acid presents a container corrosion danger and can also produce odor changes which seriously affect aerosol cosmetic perfumes. As it is difficult to avoid *all* water traces in aerosol formulation and loading, it is usually recommended that an inhibitor be employed if methylene chloride is used.

In the second place, due to its high solvent power, care must be taken in selecting methylene chloride-resistant elastomer and plastic materials for aerosol valves. Otherwise, swelling of the elastomers will clog the valves, and it is even possible that the plastic parts might dissolve completely. Fortunately, resistant materials are available, but additional care must be taken in the aerosol's application and appropriate text label warnings are desirable. An aerosol formulation containing methylene chloride should never be sprayed directly on plastic or synthetic materials. If sprayed from a distance, the danger is reduced as the vaporization rate is so rapid that the solvent action is minimized.

In connection with the use of methylene chloride in hair spray formulations it is interesting to note results from a series of extensive tests recently conducted at a dermatological clinic of a German university[4]. The test products consisted of a variety of aerosol hair fixatives formulated with shellac as the stiffening agent. The cans were pressurized with various kinds of propellants and propellant mixtures, with a range of methylene chloride concentrations. All test packages employed 60% propellant with concentrations of 0, 10, 20, and 40% methylene chloride, respectively. The test "targets" were living and dead human hair, with particular attention being paid to any morphological alterations. Also, skin tests were conducted on a number of patients with normal skin conditions and some with varying degrees of eczema, a few chronic. The results of the tests showed that even with the highest methylene chloride concentrations there were *no* noticeable deleterious effects on hair or skin. In connection with the skin cases, there was no effect whatsoever!

With the 40% concentration a slight structure change in the hair (none on the skin) was noted, but no permanent damage resulted to the hair or to the health of the hair follicle. In the 10 and 20% concentrations, the tests showed no effects worthy of comment. The higher concentrations were certainly over-dosages which could occur in actual practice only by accident. In conclusion it may be said, at least on the basis of these tests, that propellants diluted with between 10 and 20% methylene chloride may safely be used in aerosol hair formulations.

In passing it may be noted that Herzka and Pickthall in their handbook "Pressurized Packaging"[5] quote Dr. Witjens as approving the use of methylene chloride in aerosol hair formulations, a conclusion borne out by the above tests.

Next in order is a consideration of the ethanes, of which ethyl chloride, with a boiling point of + 125°C., comes first. This compound does have a slight odor and a MAC-value of 1000, the upper limit. It has a low toxicity but is highly narcotic. So far, it has found no application in the aerosol industry. Another ethane which has received attention is methyl chloroform, or 1,1,1, Trichloroethane, which has a boiling point of 73.9°C. This compound, known under the trade name "Chlorothene," is proposed by its manufacturers as a propellant diluent and solvent for the components of many known aerosol formulations. "Chlorothene" is recommended for aerosol hair spray preparations and many successful experiments have been concluded with it in this field.

"Chlorothene" is not aggressive to the skin and has a MAC-value of 500, which means that in the average room of 50 ccm a vaporization of 150 grams would produce no ill effects. A mixture of 26% "Chlorothene" to the total container content is recommended. Thus, an 18-ounce can would contain 87 grams and even though the entire contents were discharged at one time, the concentration would be well below the allowable limit. Experiments on animals with heavier dosages have shown no ill effects on lungs or liver. "Chlorothene" has also been tested for its hydrolysis action, with no substantial differences being noted between it and propellant 11.

From the ethane series, Di-, Tri-, and Perchloro ethylene may also be mentioned. They are all good solvents with rapid vaporization rates, making them suitable for insecticides. Perchlor ethylene, with a MAC-value of 200, is definitely more suitable than the other compounds in this series. It has

a low narcotic effect. However, for cosmetic aerosols these three compounds are of very little commercial importance, mainly because of odor masking difficulties.

Next for consideration is the vinyl series, which, in vinyl chloride, presents a significant and interesting compound for the aerosol industry. It is a colorless gas with very little odor and a boiling point of minus 13°C. The melting point is 159.7°C. It has a density of 0.965 at 15°C. Its flash point of 517°C. is the same as that of ethyl chloride. The substitution of only one hydrogen atom through the chlorine considerably lowers its combustion point, particularly when compared with the ethanes and ethylene. Two significant points on its pressure curve are

2.1 atmospheres at 20°C.

7.0 atmospheres at 50°C.

Calculating from its explosion point (at the lower limit of 5.7% by volume), we find that in 1 ccm of atmosphere it is necessary to release 57 liters of vinyl chloride gas or 161 grams, before the danger point is reached. This means that in a normal room space of 50 ccm a total of 8,050 grams must be spontaneously evaporated at one time before this point is arrived at. This would amount to the total contents of about 50 12-ounce cans, or 75 six-ounce cans.

From these figures it is evident that this lowest point can never be reached in the discharge of single cans, even though they may be completely filled with vinyl chloride. Only in bulk storage could the condition possibly occur. It is well known that all aerosol valves have a certain diffusion rate in storage, but even in the largest bulk storage depots, with their ventilation and fire prevention systems, not more than a few hundred grams could be present in the atmosphere at any given time. It should also be mentioned that each and every aerosol can is subjected to a warm water test bath immersion at a minimum of 50°C., which would immediately expose any observable leakage. A container deformation which would release the entire contents at one time could occur only in a transport accident or through a fire, but these extraordinary conditions which might make "bombs" of all aerosols are always present, regardless of the propellants employed.

Accumulating usage years with mounting volume show that aerosol packages — regardless of whether the active products of propellants, or both, are inflammable or non-inflammable— are safe packages in transport, storage and for home, industrial and commercial use. In danger of application they are near the bottom rung compared with all other hazards to which humans are exposed in traffic, home and industrial life. As against bathtubs, automobiles, and step ladders, the accident incidence is minuscule.

The author of this article is considered an authority in Europe on the subject. His company, Spruhtechnik, markets an entire line of cosmetic and household products employing chlorinated hydrocarbons as propellants—*The Editor.*

It is to be noted that millions of aerosol containers pressurized exclusively with vinyl chloride for some years have been stored, transported and used in all parts of the world—in tropical as well as sub-tropical climates—without a single reported case of injury, accident or damage through fire, explosion, toxicity or any other cause.

Extensive data is available on the physical properties of vinyl chloride, particularly in connection with its use as an aerosol propellant, and results on a variety of tests have been published. Cited are a range of MAC-Values between 500 and 1000. Calculating on the basis of the lower figure, we find that a person can inhale (without injury) a concentration of 500 ccm of gas (1.4 grams) in 1 ccm of atmosphere. This means that in the average room of 50 ccm at least 70 grams of vinyl chloride must be vaporized before the lower MAC-value point is reached, and 140 grams for the highest point. It has been established that with a 5% volume concentration— which corresponds to 100 times the MAC-value of 500—a slight numbness is felt. This concentration is reached only in a room of 50 ccm when 7000 grams of vinyl chloride — equal to about 20 insecticide cans of 18-ounces —are suddenly discharged at one time.

All chlorinated hydrocarbons are known to have certain narcotic properties, the degree varying with the compound. With vinyl chloride, a narcotic effect is produced in a 12% by volume atmospheric concentration, which means that in our average room of 50 ccm, 16.8 kilos (or the propellant content of 75 12-ounce cans) would have to be vaporized at one time—an impossibility in actual practice. All authorities agree that vinyl chloride has a low toxicity, causes very little irritation, and may be safely inhaled for hours at a time in concentrations up to 0.5% by volume, that is, 10 times its MAC-value.

Tests on animals have shown that daily inhalations of vinyl chloride produce no ill effects on their general well being, or any body organs. Even excessive concentrations of 5% by volume show no marked changes or reactions. Dissection of exposed animals reveals no acute inflammations or any pathological deviations from normal conditions in the respiratory and digestive organs.

Clinical tests were recently conducted on the use of vinyl chloride in a cosmetic aerosol, an oil base sun tan preparation. Marked cans were pressurized with propellants 11 and 12 and other cans with only vinyl chloride. The test series consisted of 600 exposures on 50 persons over a three-day period, with five subsequent days for observation. Some of the individuals were suffering from skin diseases and eczema conditions. No differences whatsoever between the two types of pressurizing agents were observed on any of the exposed individuals, those suffering from the skin diseases showing no reaction or ill effects. Tests were also conducted with a personal deodorant pressurized with vinyl chloride, the clinical report on which read as follows: "Insofar as tests in the 100 cases permit an evaluation, it may be said that the aerosol preparation "Körperdesodorans" (personal deodorant) has a good skin compatibility. Even eczema patients tolerated the preparation without any ill effects."

(*Continued on Page* 97)

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Butane and Propane as Aerosol Propellants . . . IV

a symposium of opinions on safety, danger to the consumer, etc.

Just how safe *are* butane, propane, and the other hydrocarbon propellants? Is their use inherently dangerous to the consumer, or has the flammability of the propellants been overemphasized?

In the interest of clearing up some of these questions, *Aerosol Age* here continues a round-up of qualified opinions from suppliers, fillers, and others in the industry. The fourth installment, printed below, is the view of a propellant supplier whose company has had wide experience with these propellants. Qualified persons who have had direct experience with the hydrocarbons are invited to contribute *their* opinions—The Editor.

By George F. Ford and H. Franz
Special Products Division
Phillips Petroleum Company
Bartlesville, Okla.

CAN hydrocarbons be used safely as aerosol propellants? Definitely yes! The "high purity" hydrocarbons have proved themselves both technically and commercially as excellent aerosol propellants.

Liquefied petroleum gas hydrocarbons of the same general class have been safely handled and sold since the 1920's. The LPG industry has grown to the point where huge underground storage caverns are required to maintain adequate inventories. Pipe lines daily pump millions of gallons of these products to terminals, while tank trucks, cylinders and tank cars continuously transport them on to various destinations. These include homes, factories, automotive fleets, barges, and power plants. All of these daily activities occur without interruption because employees handling these materials have adequate training in safe handling procedures and use the proper equipment.

Many persons from lack of knowledge have arrived at the erroneous conclusion that LPG's cannot be handled safely. Let us look at the safety record of Phillips Petroleum from the period it began to handle these products in bulk. In 1927 the first LPG bulk plant at Hudson, Ohio opened followed by Pontiac, Mich. in 1928, and Maywood, Ind. in 1929. Since that time Phillips Petroleum has opened and operated many such plants. Over this 32 year period, which has an estimated 15 million man-hour service record, there was only one serious accident. This accident happened over 20 years ago, back in 1938. This is an enviable safety record even for the so-called "safe chemicals"!

No one should attempt to use hydrocarbon propellants in applications which may result in a hazardous consumer product. However, the real criterion for determining the suitability of aerosol propellants is the finished product *as used under normal conditions*. Many formulations using hydrocarbons as the only propellant are nonflammable, and many other applications using a dual-propellant system (halocarbon-hydrocarbon) are also completely nonflammable. There are, of course, certain hydrocarbon applications, such as charcoal igniter fluids and torch fuels, where flammability is desirable. A fact which must not be overlooked is that components of an aerosol mixture, other than the propellant, may be flammable, thus contributing to a potential hazardous condition, even with a halocarbon propellant system. For example, solvents used to dissolve resins, waxes and pigments, as well as many insecticide carriers, are generally flammables.

THE safety handling problem with hydrocarbons, then, resolves itself not to the consumer level but rather to the manufacturing level. Filling lines which are to handle LPG's must be adequately engineered and the personnel properly trained. If proper precautions are taken and the hydrocarbon propellants are treated with proper respect, they are safe to handle and easy to use. These same statements can be made of almost any other chemical. You cannot touch a hot steam line or spill acid on your person without injury. If you pour gasoline on a smoldering fire, you risk being severely burned. Safety

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is just common sense and good business!

The hydrocarbons used as propellants, Propane, Isobutane, and Normal Butane, must be highly purified and especially processed to provide freedom from corrosion, mal odor and instability problems. As solvents, the especially refined light liquid hydrocarbons, Isopentane and Normal Pentane, are finding limited application. These propellants and solvents are manufactured from natural gasolines, natural gases and crude oils which contain literally thousands of different hydrocarbon chemicals. Even after careful separation, the LPG's can contain trace quantities of hydrogen, oxygen, sulfides, mercaptans, carbon dioxide, halogens, water, oils, nitrogen complexes, selenium and other metallic and gaseous products. Major contaminants include methane, ethane, ethylene, and other olefinic, acetylenic and saturated longer chain hydrocarbon types. The type of contaminant depends upon the feed stock source. With full knowledge of the feed stock characteristics, proper manufacturing techniques are applied, and stable, noncorrosive, constant pressure, nontoxic propellants result.

There are many additional desirable features that make these hydrocarbons attractive as propellants. They are immiscible with water and are lighter than water which gives them a dispensing advantage in a three-phase aerosol system. They are nonionic and are not hydrolyzed by water. Because of their low specific gravity the filler receives a relatively large volume per purchased pound or, in other words, only a relatively small amount of hydrocarbon propellant weight is necessary to give sufficient propelling thrust. This same weight factor allows the LPG's to disperse rapidly even though they are somewhat heavier than air. For example, when drying is a problem, hydrocarbons in this molecular weight range rapidly leave the surface and aid drying. Other advantages include a constant dispensing pressure and a wide choice of pressures provided by the various blends that can be made available. The relative abundance and attractive prices are not to be overlooked by cost conscious fillers.

Concerning consumer hazards, let us look into the seriousness of accidental release of the entire contents of a can of LPG-charged aerosol mixture. The amount of LPG will vary with the formulation, but let us take an average quantity of 10 grams as an example. Assume it is a good dry day and at sea level with a high-pressure front overhead to make the worst possible case. Further, to increase the possibility of forming a flammable mixture, let us say that none of the LPG becomes diluted with other materials of the formulation which would naturally dampen flammable tendencies. If this 10 gram amount of LPG were evenly dispersed in a cube measuring over two feet per edge, it would not produce a flammable mixture. Can you imagine an aerosol propellant which has been suddenly released confining itself to a two foot cube? This example is based on a conversion of the volume percent flammable limits data listed by the National Fire Protection Association.

In summary, hydrocarbon propellants definitely have a place in the aerosol field as low cost, noncorrosive, stable propellants. They can be handled safely in the transportation, storage, and filling operations. Nonflammable end products can be formulated which present no special consumer hazards. Further, hydrocarbons can be blended with nonflammable propellants in substantial percentages to lower the over-all propellant cost, while in some cases actually increasing the performance, and still provide a nonflammable propellant. The proof of suitability? Already over four years of safe, successful operation.★

•

Rexall Gives Dooley Gift

A freight car load of drugs valued at $20,000 has been presented by The Rexall Drug & Chemical Co., Los Angeles, to Dr. Thomas Dooley, St. Louis missionary, for use in his jungle hospitals in Laos.

Prentiss Drug & Chemical Co., Inc.
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Gulf Introduces New Type Valve for "Ant-Roach Bomb"

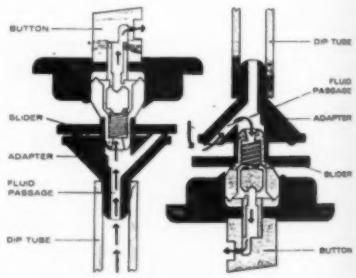
THE GULF OIL CORP., leading marketer of aerosol insecticides and moth proofers, has introduced its "Ant Roach Bomb" on the consumer market with a valve that sprays in either the upright or inverted position. Called the "Gulf SA" valve (for "Sprays Anyway") the valve was developed two years ago in the entomology laboratory at Gulf Research Center, Harmarville, Pa. and currently is made under a license agreement by Seaquist Manufacturing Corp., Cary, Ill.

Gulf now owns broad patents covering use of such valves in the U.S., and has been granted or has applied for similar patents in 22 foreign countries. From the very beginning, Gulf made it clear that it had no intention of getting into the valve-making business, and would license existing valve makers. For the "Ant Roach Bomb" introduced on the consumer market in December, the basic valve is the conventional Seaquist "Sea-Spray" type which has been modified to include the "spray anyway" feature.

Basically the valve works like this: when the can is inverted, a by-pass for the dip tube is provided. Therefore, when the container is upright, the valve functions exactly as any conventional aerosol with a dip tube. The by-pass is closed, preventing the loss of propellant from the headspace, and the liquid is forced by pressure of the gas up the dip tube and out the valve orifice. When the container is inverted, the by-pass opens and the product moves out through the opening.

Heart of the special device is an adapter, made of nylon, and a slider, made of Delrin. In other versions of the valve, various metal sliders are also being tried for specific products.

As might be expected with a company of the size and resources of Gulf Oil, the new package for the "Ant Roach Bomb" is being advertised in the consumer press and in the trade press for all of the retail outlets which Gulf insecticides employ. The label makes prominent mention of the fact that the "New valve works even upside down."



As will be seen by this diagram, key feature of the new valve is the sliding mechanism, which blocks the dip tube when the container is inverted.

The *Orange Disc*, house organ of the company, points out that use of the new valve will eliminate "aerosol frustration" for the consumer. "Aerosol frustration" is described as the feeling that exists after the user has used up the propellant (through accidental discharge while the container is in the wrong position) so that he eventually will have to throw the partially full container away.

It is anticipated that there may be developed a market for the valve in residual insecticides, paints and other products where the position of the container must be changed constantly to achieve intended results.★

A. J. Samuel, senior technician of the entomology section of Gulf Research & Development Co., discussing the valve with J. M. Fulton, of Gulf Oil's patent department, and A. C. Miller, section head of the entomology section.

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Pre-Sale Cap Removal Prevented Through Use of New Cover Seal

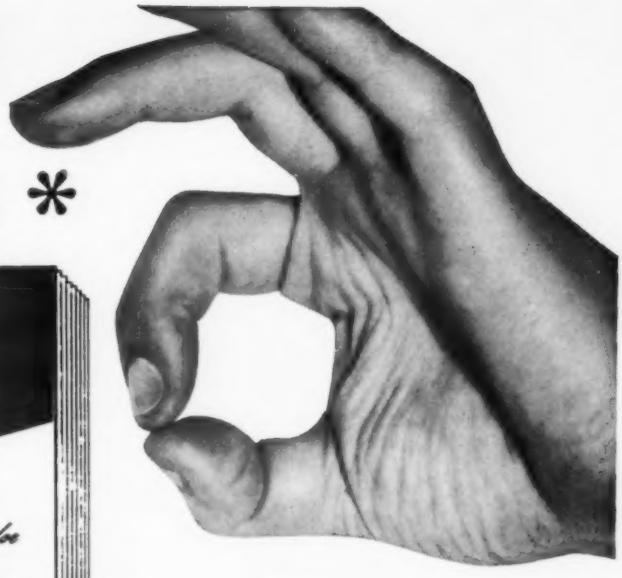
TAMPERING with valves, testing the performance of containers, cap switching to take advantage of lower prices, and other customer tampering *prior* to sale — all complaints heard against selling aerosols in self-service retail outlets, may go by the boards if a new cap sealer developed by Plasti-Kote, Inc., Cleveland aerosol paint marketer, proves successful.

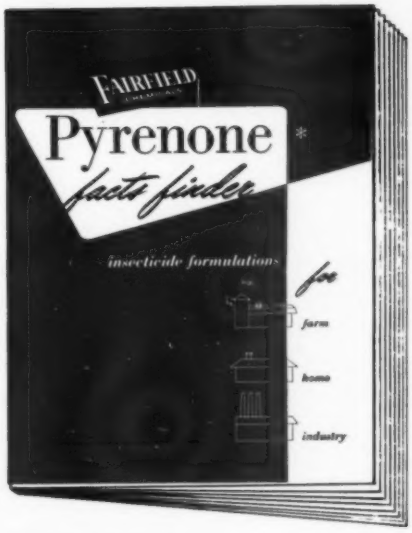
Plasti-Kote's new development is a "Cel-O-Seal" cellulose protective band (made by DuPont) which will be incorporated onto Plasti-Kote's regular package for supermarket and self-service hardware selling. According to Elias Shapiro, the company's vice-president in charge of sales, the new development, gives Plasti-Kote the first sealed container of its kind for the aerosol paint industry. Device will be used for company's 16-ounce cans of enamels, lacquers, and car colors.

Working closely with its suppliers, Plasti-Kote was able to redesign its "high hat" aerosol protective cap to permit use of the snug-fitting, transparent "Cel-O-Seal" band. The band is mechanically applied in the production line by a John Burton "Cellubander" machine, thus insuring against any delay in previous production line speeds. As the band dries, it shrinks and pulls up tight on the shoulder of the can and on the cap making seal, which must be broken to remove the cap.

Development of this band, and introduction of the first cardboard carton for an aerosol toothpaste by Procter & Gamble (page 37 this issue) could herald increased effort by marketers to make their products "tamper-proof" for self-service retail outlets.★

AT YOUR FINGER TIPS *





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AEROSOLS in review

In this column important aerosol subjects appearing in other periodicals (both domestic and foreign) will be reviewed and summarized. It is felt that this service will enable the reader to keep abreast of most of the significant contemporary articles on the industry, even though they may appear in other periodicals. Since there is a chance that some pertinent articles may be overlooked, it will be helpful if readers will call our attention to any they judge important enough to review.—*The Editor.*

Perfume Rush to Aerosols Reported Snowballing

THE phenomenal sales growth of aerosol perfumes and colognes, coupled with recent striking successes of Lanvin and Chanel, has impelled nearly every perfume marketer to jump on the aerosol bandwagon, declares the Jan. 2 issue of *Chemical Week*. Major evidence of the success is Lanvin, which *Chemweek* says rang up $5 million (1 million containers) in sales of a new spray version of its Arpege during the 1959 Christmas season.

The story notes that only seven years ago, the aerosol perfume market was virtually non-existent, but since that time it has captured about 20% of the perfume industry's $110 million market. The ice was broken, among the major marketers, the report concludes, by the 1958 entry of Chanel into the field with its "Chanel No. 5" cologne. "Chanel sees its spray products as a complement to its regular line, rather than as a replacement. 'The spray also has introduced Chanel to many non-users,' says Henry Calisher, sales manager of Chanel.

"Both Chanel and Lanvin cite extensive testing periods before they went into the market. E. L. Cournand, president of Lanvin, told *Chemical Week* that he had been working on the idea of an aerosol for eight years and put his Arpege mist through a one-year shelf test before it hit the sales counters.

Perhaps the most interesting feature of the story is its analysis of how much of an impact the aerosol may eventually have. *Chemweek* reports that 77% of all fragrances sold are now packaged in aerosols, and that some trade sources are predicting that in five years virtually all colognes and perfumes will be sprays.

"Some perfume marketers think it unlikely that aerosols will completely saturate the market. They believe that some women will always prefer glass-bottled perfume for their boudoirs, so they will continue to make a line of conventionally packaged items. Eventually, though, all houses, will be forced by marketing rivalry to sell an aerosol line. And with the exception of a few holdouts like Jean Patou (New York), Caron (New York), and Evyan (New York), nearly all houses are giving in to this marketing pressure. The next entrant may well be Guerlain (New York), said to be ready to market its Shalimar spray this month.

"Other firms, such as Lentheric (New York), hint that aerosols are not the ultimate in perfume packaging, that 'fickle woman' may, for various reasons, decide on some other type of product. While working on aerosols now, Lentheric is still researching other perfumes, forms, and packages.

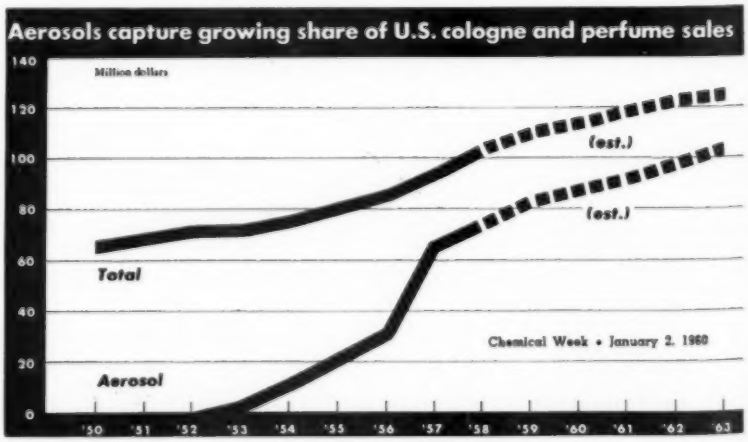
"If the current growth rate of 20-25% per year continues in this field, however, by 1963 aerosol industry suppliers can look for at least a $100 million market in which to vend their wares."

•

A discussion of future prospects of DuPont's Delrin as an aerosol container material is a feature article in the December issue of *Consumer Packaging*. It points out that the resin is translucent in its natural state, and has virtually unlimited colorability.

The article, written by Paul R. Kemper of DuPont's Polychemicals Department, says that "The permeability of Delrin is relatively low in the case of most perfumes, oils, aero-

(*Continued on Page* 96)



THE QWIP THAT TOPPED THEM ALL!

CONGRATULATIONS TO QWIP! In the 1959 Aerosol Packaging Awards Competition—Sponsored by the Chemical Specialties Manufacturers Association—this container for Qwip Dessert Topping won the Grand Award and top honors in the food products division. The Qwip container was manufactured by Canco for the Avoset Co.

The prize-winning Qwip container is one more example of the way Canco cans and Canco creative lithography combine to produce packages with exceptional eye and sales appeal.

At Canco, you'll find the container that's right for your product, and lithographers with the skill, facilities and experience to make your package the stand-out in its field.

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with MM&R Fragrances

Let MM&R put a powerful urge to buy in your aerosols. MM&R perfume oils overcome even the heaviest odors of basic chemicals and impart a refreshing, sales-stimulating fragrance to your products, at low cost.

New MM&R perfume oils are being created constantly to keep abreast with rapid advancements in the aerosol field and to meet the special requirements of our customers.

MM&R's cumulative knowledge and experience, gained during more than sixty-three years in the development of perfume oils — over fifteen in connection with aerosols — are at your service in increasing the salability of your products.

Write now for complete information.

MAGNUS, MABEE & REYNARD, INC.

The World's Most Famous Supplier of Essential Oils, Concentrated Flavors and Basic Perfume Oils

16 DESBROSSES STREET, NEW YORK 13, NEW YORK
221 NORTH LaSALLE STREET, CHICAGO 1, ILLINOIS

New FTC Charges on Advertising Draw Warnings from Agencies, TGA

THE advertising industry late last month continued frantically backing and filling in the wake of new Federal Trade Commission charges against major toilet goods marketers for misleading television advertising (page 66). The new FTC citations followed charges by actor-director-producer Robert Montgomery that it was common knowledge among television networks and advertising agencies that quiz shows were rigged long *before* the fakery was exposed officially; and indications by Rep. Oren Harris that his subcommittee would continue its investigation into television practices.

Serious doubts about Mr. Montgomery's charges were expressed by Fairfax M. Cone, chairman of the executive committee of Foote, Cone & Belding, a leading agency which last year placed some $40 million in television advertising. Despite his agency's importance in the field, Mr. Cone declared, *he* hadn't any knowledge about quiz show rigging prior to official disclosure.

Speaking to the annual meeting of the Newspaper Advertising Executives Association, Mr. Cone warned that a "witch hunt" was on and that "all advertising is under attack" because of the television scandals. He termed substitution of shaving cream for whipped cream and similar switches "matters of technique" and claimed they were made "without any intention whatever to deceive anyone." He contended the sole purpose was to make products appear as they really are.

On the same day Mr. Cone was making his address in Chicago (Jan. 19), the American Association of Advertising Agencies in New York took a major step to rid the air of offensive television advertising. The association issued a special interpretation of its copy code, pointing out that television commercials are often seen by mixed family groups; and that listening to them is not always voluntary, as is the reading of print advertising. "For these reasons," the statement said, "they magnify any faults of taste or manners or advertising misrepresentation."

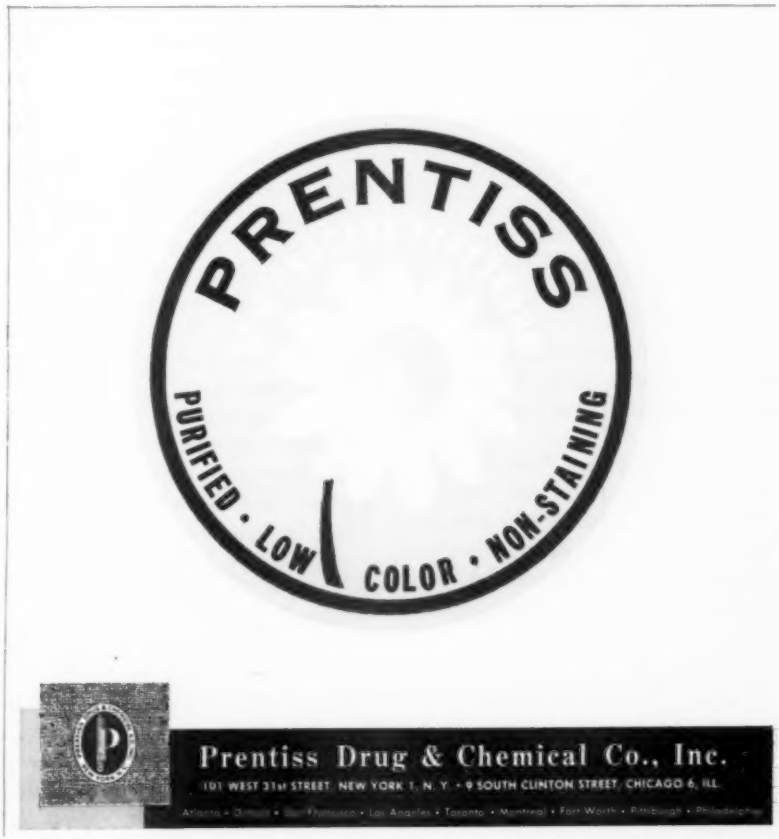
The AAAA statement cautioned against strident tones and improper voice levels and the general manner of certain announcers. The association called particular attention to possible lack of taste in the advertising of deodorants, depilatories, laxatives, and cold and headache remedies. It also called attention to the use of costumes, props, or settings which imply that persons in advertising commercials are associated with the medical, dental, or nursing professions.

Included in the statement was an implied threat that offending agencies might be forced out of the association. This implication was made by a reiteration of the provision in the association's rules making it possible to annul membership of an offending agency.

Possibly the most intelligent statement in that crucial third week in January came from the office of S. L. Mayham, executive vice-president of the Toilet Goods Association. Mr. Mayham pointed out that the TGA's office had been repeatedly warning toilet goods advertisers against misleading advertising. He said that pressure on the Federal Trade Commission from the press, the public, and both houses of Congress is turning concentrated attention on all advertising, particularly that on television. "Complaints have already been issued against some toilet goods' companies and others are now in the making," he said.

"Under these circumstances I would again impress upon members

(*Continued on Page* 94)


PRENTISS
PURIFIED • LOW COLOR • NON-STAINING
Prentiss Drug & Chemical Co., Inc.
101 WEST 31st STREET, NEW YORK 1, N. Y. • 9 SOUTH CLINTON STREET, CHICAGO 6, ILL.

NEWS of Pressure Packaging

Monahon Joins Oil Equipment

Oil Equipment Laboratories, Inc., of Elizabeth, N. J., has announced the election of Richard M. Monahon as vice-president, responsibility for sales and product development. Formerly vice-president of Newark Paper Box, he has a varied background in packaging design and sales in the can manufacturing, plastic molding, and paper box industries.

A graduate of Dartmouth College, Mr. Monahon entered the advertising field with Geyer, Cornell & Newell, Detroit agency. During the war he saw service in the Navy as commander of a PT boat squadron.

Since the war Mr. Monahon has been associated with the Geo. V. Clark Co., of Englewood, N. J. in can and transparent container sales and he moved to Newark Paper Box when the transparent operation of Clark was acquired by Newark. Active in public service Mr. Monahon has participated in fund raising annually for the Red Cross. He is at present chairman of the Somerset Hills Chapter of the American Red Cross.

•

Shulton Revamps Research

The formation of two new toiletries research laboratories to facilitate further development of new products for both the domestic and overseas markets has been announced by Shulton, Inc., New York.

Robert L. Goldemberg has been named director of toiletries research for the domestic market. He joined Shulton in 1958 as project leader and was named associate director of toiletries research in April 1959. Before joining Shulton, he was a senior chemist with Coty.

Heinz J. Eierman has been appointed director of research, International Division, and will be responsible for new product development for the overseas markets and research and control in Shulton's overseas laboratories.

•

"Pledge" Success in Britain

S. C. Johnson, Ltd., West Drayton, England (subsidiary of S. C. Johnson of Madison, Wis.), last month reported that it had sold 2.25 million "Pledge" aerosol containers from March, 1959 to the end of the year. According to a report in the *Financial Times,* production of the aerosol wax is claimed to be the largest single aerosol contract in the United Kingdom. It began in March at the rate of 5000 per day and is currently scheduled to reach an average of over 30,000 units a day while present sales continue.

The contract is being filled by the Aerosol Packaging Co. (of the Thomas Tilling and Commercial Plastics groups) and by P.A.F.C.O., a subsidiary of Cooper, Madougall and Robertson.

Alexander Is CanCo VP

Claude L. Alexander has been appointed a vice president of the American Can Co., New York, major aerosol container manufacturer. He will continue to supervise the overall operations of the Bradley-Sun Division of American Can, producers of aluminum containers. His headquarters are in Hillside, N. J.

Mr. Alexander, 32 years old, is a graduate of Colgate University. He has served as a director of the Washington, N. J. Chamber of Commerce and is a member of various management and industrial associations.

FTC Cites Colgate Again in New TV Ad Crackdown

THE Colgate-Palmolive Co., New York aerosol marketer, cited in November by the Federal Trade Commission for deceptive advertising for its "Gardol protective shield" toothpaste ads, last month was cited again for its aerosol shave cream advertisements showing sandpaper being shaved. This time the FTC charged that real sandpaper was not used in the Palmolive Rapid Shave television advertisement, and that the sandpaper shown was actually a "mock-up" made of plexiglass with sand applied.

The commission charged that such "misrepresentations tend to deceive purchasers and have diverted trade unfairly from the manufacturer's competitors in violation of the Federal Trade Commission Act". The charges, made Jan. 14 in Washington, were part of a large-scale crackdown on misleading television advertising launched by The FTC. Also cited on Jan. 14 was Lever Bros. Co. for its Pepsodent toothpaste ads which claim that the dentifrice "removes tobacco stains from the teeth of all smokers."

Colgate and Lever Bros. were given 30 days to reply to the complaints, after which the case goes to a commission hearing examiner. His decision would be final unless the commission decided to modify or dismiss it.

The day the FTC charges were made public, Colgate issued a statement claiming that scientific research had proved "beyond any doubt" that sandpaper could be shaved. It contended that the use of sand-coated plexiglass instead of regular sandpaper did not constitute misrepresentation, since "the sandpaper demonstration had been successfully duplicated on many occasions."

The statement said, however, that the shading variation between the shaved and unshaved parts of regular sandpaper did not show clearly on film. As a result, Ted Bates & Co., Colgate's advertising agency, felt justified in "using a device which made it possible to show the action on film in a manner consistent with the actual performance."

Neither Colgate nor the FTC mentioned whether ease of shaving sandpaper offered any valid comparison with ease of shaving the human skin.

NEW! Simplest, easiest-to-operate most flexible AEROSOL line ever offered

UP TO 3,600 PER HOUR. New 800 line, shown in a typical user's installation, is composed of standard 2- and 3-ft. stainless steel sections. Units may be added or substituted at any time.

NEW! KARTRIDG PAK 800 SERIES LINE fully integrated for quality production

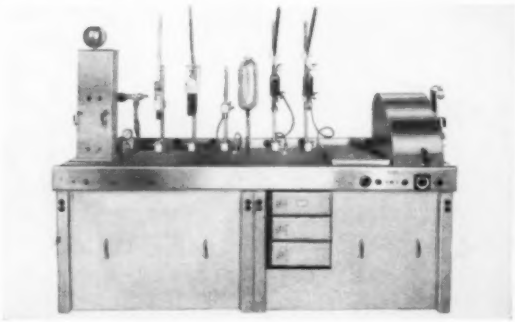
COMPLETE ENGINEERING. based on KP's unequalled experience as oldest and largest maker of aerosol equipment, has built the highest quality and reliability into this *fully integrated* aerosol line. The best line ever offered, it will deliver years of dependable and profitable service.

If aerosols are in your future—or in your present—see the superiorities which KP packaging lines offer before you make any installation. There are KP lines and equipment for all types of aerosols, with capacities from 25,000 a year to 2½ million.

KP-Mojonnier lines have filled, and are now filling, more aerosol cans than any other kind of equipment.

In your area, a local Kartridg Pak factory representative is ready to discuss any phase of aerosol packaging. A call or a letter to us will send him to you promptly.

SPECIAL AEROSOL-TESTING LINE KP laboratory equipment, for pre-testing aerosol packaging at low cost, is adaptable for any combination of products and propellants.



RENT LABORATORY EQUIPMENT! Any unit in the above line, or the whole test line, may be rented for aerosol testing. Low monthly rentals may be applied to purchase.

KP THE KARTRIDG PAK CO.

Dept. A., 9151 W. Fullerton Ave., Franklin Park, Ill., Telephone NAtional 5-8270

NORTHEAST & CANADA	SOUTHEASTERN	CENTRAL	SOUTH CENTRAL	WESTERN
George McAteer	Jack Jecker	T. J. Rink	Carl F. Allen	Frank Craig
475 Fifth Avenue	475 Fifth Avenue	9151 W. Fullerton Avenue	921 Hicks Street	41 Roosevelt Circle
New York 17	New York 17	Franklin Park, Ill.	West Monroe, La.	Palo Alto, California
LExington 2-4991	LExington 2-4991	GLadstone 5-1013	P.O. Box 1087	DAvenport 1-2926
			FAirfax 5-2516	

Here is where G. BARR & COMPANY aerosol packaging PAYS OFF!

Here, at the crucial point of purchase—when your aerosol product reaches the hands of the ultimate consumer—the importance of having your private label aerosol made by G. Barr & Company becomes apparent.

It is here that the more than 60 production line inspections and the meticulous quality controls that are routine at G. Barr & Company, pay off!

This assurance that your G. Barr & Company packaged product will reach the hands of the consumer perfectly formulated and packaged is backed by our technical staff of 20 research and product development chemists, by our two plant production efficiencies and by the fact that we maintain the strictest standards of quality in the industry.

If you believe your product deserves the utmost in packaging proficiency—yet at no increase in cost—ask us to outline the many advantages of our service for you.

G. BARR & COMPANY *Private Label Aerosols*

NEW YORK: 4747 Bronx Blvd., FAirbanks 5-7870 • CHICAGO: 3601 S. Racine Ave., YArds 7-1700

Century Buys Chemo Puro

Chemo Puro Manufacturing Co., Newark, N. J. producers of fine chemicals and intermediates for the cosmetic and pharmaceutical industries, was one of a number of companies acquired recently by Century Chemical Corp., a newly-formed chemical complex with headquarters in New York. Century, formed in 1958, has also taken over Oil & Chemical Terminals, Inc., and the Asphalt Division of Oil & Chemical Products, Inc., both of Newark; Chemo Puro AG, a European sales organization with headquarters in Zurich, Switzerland; and Wilson Organic Chemicals, Inc., Sayreville, N. J. producer of aromatics, pigments, and fungicides.

Century announced plans to expand Chemo Puro's operation by construction of new production units for organic nitro compounds, chlorinated organic chemicals, and polybasic acid. Operations of the newly acquired companies will be completely integrated with those of the parent company. Century is headed by Theodore S. Hodgins, former vice-president for research of Reichold Chemicals.

•

Johnson Expands Overseas

A world-wide program to expand overseas operations including new personnel assignments, was announced last month by S. C. Johnson & Son., Racine, Wis.

Named as vice president and regional director for Europe, Africa and the Near East is Samuel C. Johnson great-grandson of the company's founder, who has served as new products director and as service products division vice-president. Serving with him under international vice-president A. O. Fisher, will be Dr. Richard O. Lang, new international administrator; Harold C. Mason, director of international finance, and John J. Louis, Jr., director of international marketing.

Commenting on these major organizational moves, company president Howard M. Packard said: "More than 20% of our consolidated gross sales volume now is accounted for by our subsidiaries overseas. We plan to develop the greatly increased selling opportunities that are now apparent." He reported that Johnson products now are sold in 110 marketing areas. In 11 countries they are manufactured by subsidiaries and in 19 countries they are made and sold under license arrangement by manufacturing distributors. Export sales from Johnson's various factories to 80 authorized distributors in still other areas are also an important factor in overseas business.

•

French Heads Gen. Chem.

Frank J. French, executive vice-president, has been named president of the General Chemical Division of Allied Chemical Corp., New York, manufacturer of aerosol propellants, insect toxicants, and a wide range of basic chemicals. He succeeds Irb H. Fooshee, who was moved up to become vice-president for manufacturing of the parent company, Allied Chemical. Mr. French joined the company in 1925, was named vice-president in 1958, and executive vice-president in 1959.

Florasynth Elevates Miller

John R. Miller has been promoted to Eastern sales manager of Florasynth Laboratories, Inc., New York, and will assume many of the responsibilities undertaken by the late Arch Payne, assistant vice president.

Prior to this appointment, Mr. Miller served as a flavor specialist, in Florasynth's Midwest sales office. He has 20 years of food experience in government, military and civilian organizations.

During World War II, Mr. Miller was assigned to the Quartermaster Corps, subsistence depot at Sydney, Australia, with responsibilities for developing sources of food supply in Australia. In 1952 he was assigned as officer-in-charge, Munich (Germany) Procurement Office. In 1954 he resigned his commission (Lt. Col.) and undertook work as a consultant to European food processors. He returned to the U.S. in 1955 and in 1956 joined Florasynth Laboratories.

•

Bristol-Myers Revamps Labs

Bristol-Myers Co., New York, last month announced that Bristol Laboratories, Inc., a subsidiary, has been merged into the parent company and will operate as a division.

Prentiss Drug & Chemical Co., Inc.
101 WEST 31st STREET, NEW YORK 1, N. Y. • 9 SOUTH CLINTON STREET, CHICAGO 6, ILL.
Atlanta • Detroit • San Francisco • Los Angeles • Toronto • Montreal • Fort Worth • Pittsburgh • Philadelphia

Pennsalt Research Unit

Pennsalt Chemicals Corp., Philadelphia, has concluded purchase negotiations for a 50-acre site in the King of Prussia Park for construction of a new $6-million Technical Center. This park is located at the Valley Forge Interchange of the Pennsylvania Turnpike.

In announcing the new purchase, Pennsalt president, William P. Drake, said that it will permit an orderly expansion of Pennsalt's growing needs for technical facilities; for research, development and technical service. Currently, Pennsalt operates technical facilities at Wyndmoor and Devon.

Plans call for a campus-type arrangement featuring a central mall. The first building in the complex will be a two-story laboratory occupying approximately 21,000 square feet. This will be devoted to product development and technical service on Pennsalt's proprietary chemicals for the metal working industry, laundry and dry cleaning trade, food and dairy plants, as well as consumer products for the farm and home. The "Isotron" aerosol propellant technical group will also occupy expanded facilities in this new building.

Architect's drawing of Pennsalt's proposed technical center. Aerosol research will be carried out in the first building completed.

Cabot, Cabot & Forbes will do the design, engineering and construction on their package plan basis. Construction of the first building will start early in 1960 and will be completed before the end of the year.

Revlon Buys Drug Firm

The Asthmanefrin Co., Portland, Ore., manufacturer and marketer of "Asthmanefrin," "Vaponefrin," and other products for the relief of asthma, has been purchased by Revlon, Inc., leading cosmetic marketer. The company will be integrated into Revlon's wholly-owned Thayer Laboratories subsidiary, which was established for the manufacture of proprietary drugs.

•

Canco Names Two Directors

American Can Co., New York, last month named William F. May and Clarence L. Van Schaick to its board

William F. May

of directors. Mr. May, a vice-president since early last year, is in charge of the Canco Division, the metal can making operation. Mr. Van Schaick has been a vice-president since 1957 when the Dixie Cup Co., which he headed, was acquired by American Can.

•

Velsicol Appoints Brasfield

T. W. Brasfield has been named director of marketing by Velsicol Chemical Co., Chicago manufacturer of insecticides. He was previously with the Naugatuck Chemical Division of United States Rubber Co.

•

Orahovats to B-M Post

The Bristol-Myers Co., Hillside, N. J., has named Dr. Peter D. Orahovats to the post of medical director of its Products Division.

PRENTISS
PURIFIED · LOW COLOR · NON-STAINING
Prentiss Drug & Chemical Co., Inc.
101 WEST 31st STREET, NEW YORK 1, N. Y. • 9 SOUTH CLINTON STREET, CHICAGO 6, ILL.
Atlanta • Detroit • San Francisco • Los Angeles • Toronto • Montreal • Fort Worth • Pittsburgh • Philadelphia

The RIGHT FRAGRANCE will help your product make the right impression . . . and that means sales acceptance. A quality fragrance developed through the modern research, technical and creative abilities of van Ameringen-Haebler will suit your product perfectly, will impress your customers and will cultivate brand loyalty.

Send us a sample of your product and let us suggest a fragrance that will make the right impression.

van Ameringen-Haebler *division of*
INTERNATIONAL FLAVORS & FRAGRANCES INC.
521 West 57th Street • New York 19, New York
Leading creators and manufacturers in the world of fragrance
ARGENTINA AUSTRIA BELGIUM BRAZIL CANADA ENGLAND FRANCE GERMANY
HOLLAND INDONESIA ITALY NORWAY SOUTH AFRICA SWEDEN SWITZERLAND

FOR

AEROSOL DISPENSING

THE WIDEST RANGE OF PRESSURIZED PRODUCTS

RISDON

Valves

The Risdon MAGNA-METER Valve

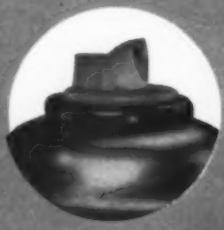
A large capacity metering valve for dispensing pre-measured amounts from fractional to multiple cc quantities in spray, liquid or foam form.

The Risdon METERED SPRAY Valve

Delivers a pre-measured spray of duration determined by packager. Actuator must be released and pressed again for subsequent measured spray.

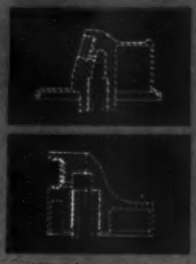
The Risdon GB Valve

A non-metallic valve for glass, plastic and small metal containers. No spring. No metal in contact with contents. No danger of corrosion or contamination.



The Risdon 5210 Valve

For metal containers. One basic valve — five models with special actuator to suit specific function. Suitable for both refrigeration and pressure filling.



The Risdon MICRO-MIST Valve

Any Risdon valve becomes a "Micro-Mist" valve when fitted with Risdon's patented Micro-Mist mechanical break-up actuator. Enables valve to dispense 3-phase products or give super-spray performance on 2-phase and ultra-low pressure products. Increases formulation latitude and economy.

- Dispense an extensive variety of formulations including propellant emulsions or dispersions • certain types of powders • water-base products • 2-phase, 3-phase & ultra-low pressure products.
- Dispense products in spray, liquid or foam form.
- Applied to glass, plastic and metal containers.
- Dispense pre-measured dosages or unmeasured amounts.
- Available with special applicator-actuators to suit the product.

Contact Risdon for further information, samples and prices.

Valves shown are covered by Patents or Patents Pend.

RISDON

THE RISDON MANUFACTURING COMPANY

AEROSOL DIVISION

Naugatuck, Conn.

RI-114

Risdon valves can be fitted with special actuator-applicators such as shown.

Gard Industries Appoints Four New Executives

E. J. Witt W. H. East Charles Ross L. T. Caulfield

GARD INDUSTRIES, INC., Northfield, Ill., last month named four new executives as part of a major expansion program. The company, a marketer of aerosol products and a contract filler, recently formed a separate food subsidiary, Gard Pressure Foods Corp.

Named to top management positions were Linus T. Caulfield, manager of the manufacturing division for Gard Industries and its subsidiary sales corporation, Gard Pressure Foods Corp.; William H. East, Jr., sales director for Gard Pressure Foods Corp.; Earl J. Witt, sales director of the general products division which includes specialized contract filling and general consumer products for the sales division; and Charles Ross, comptroller and office manager.

Mr. Caulfield was formerly with General Electric Co., where he worked on industry control, specializing in development engineering. He most recently was works manager of special products at Northern Electric Co. At Gard he is in charge of both manufacturing of products for the sales divisions and all contract filling operations. Departments under his jurisdiction include shipping, receiving, materials handling, chemical production, engineering, production. Mr. Caulfield received his B.S. degree in economics at Iowa State College.

Mr. East, was formerly advertising manager for Beatrice Foods Co. and recently vice-president and sales manager of Bob Atcher Films, Inc. In his capacity as sales director of Gard Pressure Foods, he supervises the distribution and marketing of aerosol food products.

Mr. Witt was formerly national sales director of Gold Seal (Glass Wax") and head of Earl Witt, Inc., sales, merchandising, and advertising consultants whose promotions included "Perma Starch," "Nylon Dip," "Kindle Kwik," "Burn Aid," and "Delta" stereo cameras. In previous connections he was associated with Heath & Milligan Paint Manufacturing Co. (now Glidden) and was sales manager of Benjamin Moore & Co. In connection with his Glass Wax promotion, *Advertising Age* stated that "nothing since the turn of the century has so stirred the sales and merchandising world as the dramatic success of Glass Wax, directed and 'spark plugged' by Earl Witt." He was later voted one of the three top salesmen in the United States. In addition to his current duties as sales director for Gard Industries' general products division, Witt also heads the company's marketing advisory committee which provides sales and marketing advice to contract filling customers.

Mr. Ross, a graduate of the University of Virginia, was formerly with Sears, Roebuck & Co. as retail store manager, buyer, and general manager of the washing machine and refrigerator departments. More recently he was president of the McAllister-Ross Corp., manufacturers of vacuum cleaners, and later director of new appliance product development for the Chamberlain Corp., of Iowa.

'60 Promising For Fragrance

The year 1960 should be an especially favorable one for the U.S. fragrance industry, Charles P. Walker, president of International Flavors and Fragrances, Inc., declared last month. He predicted volume will exceed the record year of 1959, when U.S. sales of all types of consumer products containing fragrances amounted to more than $8 billion at retail level. He based his estimate on expected sales increases in products of the major users of fragrances, including cosmetic and aerosol industries.

Especially interesting to the U.S. fragrance manufacturer, Mr. Walker stated, is the continued expansion of the world market for U.S. brand products. This expansion should continue with increased momentum during 1960, particularly in Europe where improved methods of distribution, a marked rise in disposable income, and the lessening of continental tariff barriers should create favorable conditions for consumer products of U.S. producers.

Mr. Walker further noted the recent advances in the chemical technology of fragrance manufacturing, such as organic synthesis, which will produce better and more stable fragrance materials at lower cost, and which will permit the upgrading of products of all types.

•

College Names Dr. Barr

Dr. Martin Barr, associate professor of pharmacy, has been named professor of physical pharmacy and pharmaceutical research by the Philadelphia College of Pharmacy and Science, Philadelphia. Dr. Barr, who has done considerable research work on pharmaceutical aerosols, was the guiding hand behind the "Aerosol Symposium for the Pharmaceutical Industry," held at the college on August 20, 1957. This symposium was the first of its kind outside the chemical specialties field devoted exclusively to aerosol problems.

•

Lorenz to Canco Post

R. H. Lorenz has been named general traffic manager of the traffic division, purchasing department, of the Canco Division of American Can Co., New York. He was formerly general transportation manager of the company's Marathon Division.

IN NORDA'S MUSEUM ROOM, one of the world's largest amethystine crystals, weighing nearly 300 kilos, from South Africa. A rare specimen you're invited to see when visiting Norda.
Any AMETHYST can tell you how Norda makes good scents
Beauties the world admires come from knowing hands like Norda's.
Norda "cuts" and "polishes" Nature's raw materials to flawless perfection, to make scents of great brilliance. Probably nothing else anywhere will help you sell like Norda's skill will.
If there's a glint of something new—something better—in your eye, come to Norda.
Norda makes good scents
Norda

Samples, free, by sending your business letterhead to
NORDA, 601 W. 26th St., New York 1, N. Y. • Chicago • Los Angeles • San Francisco • Toronto • Montreal • Havana • London • Paris • Grasse • Mexico City

Wirz Appoints H. W. Cox

A. H. Wirz, Inc., Chester, Pa. aerosol container manufacturers, have appointed Henry W. Cox sales supervisor. In his

Henry W. Cox

new capacity he will serve as a liaison between both the sales and the production divisions for all products made by the company. These include such new plastic products as bottles, tubes, aerosol containers and other plastic specialty items.

Mr. Cox, who attended Penn State University, will have the responsibility of coordinating sales of these various Wirz products through their sales offices.

•

DuPont Names 3 in Sales

Lewis G. Kirk and Peter V. Ricciardi have been assigned as sales representatives to the Chicago and New York district offices, respectively, of the DuPont's "Freon" Products Division, while Lammot D. Copeland, Jr., has been named sales correspondent in the division's Western District office at Palo Alto, Calif.

Mr. Kirk, who obtained his bachelor of arts degree from Catawba College and his master of science from University of Delaware, joined the DuPont Co. as a chemist in 1955 and was assigned to its "Freon" Products Laboratory. This year he was named technical assistant in the fluoro solvents and chemicals section of the "Freon" Products Division.

Mr. Ricciardi, who attended Stevens Institute of Technology and obtained his bachelor of science degree later from Notre Dame University, joined DuPont as a junior research chemist at its Dyes and Chemicals Division technical laboratory in 1952. For the last six years, he has been a technical demonstrator and salesman in the New York district office of the Dyes and Chemicals Division.

Mr. Copeland joined DuPont as a junior research chemist in the plant's technical section of its Organic Chemicals Department after obtaining his bachelor of arts degree from Harvard University in 1954. Following a two-year leave of absence to complete military service, he was assigned to the department's Antioch, Calif., plant in 1957, first as a research chemist and then as a junior supervisor.

•

Chisholm-Ryder Closes Plant

Chisholm-Ryder Co., Inc., Niagara Falls, N. Y., producer of coding and other container handling equipment, terminated operations at its Niagara Falls plant on Dec. 31. The move idled 150 employees of the plant, which had been operated for 65 years.

Manuel C. Llop, company president, said the results of a two-year field study indicated that a change in manufacturing policy was needed. He said the company would retain its administrative and sales organization, but would subcontract its manufacturing to other firms.

•

Stanley Appoints Jeanne Smith

Stanley Home Products, Inc., Westfield, Mass., has named Jeanne L. Smith to be product supervisor, a post in which she will be responsible for the design of all the company's labels, containers and promotional material. She was formerly assistant director of marketing and merchandising.

CanCo Appoints Smith

P. N. Smith, formerly a metal can sales representative in Cleveland, has been named an assistant products sales manager in the non-food can group of Continental Can Co., New York. His product line includes cans for motor oil, anti-freeze and all aerosol products. He will be headquartered in Continental's New York office.

•

New English Contract Filler

Brentford Soap Co., Ltd., Brentford (Middlesex), England, longtime manufacturers of soaps and allied products for the laundry and cosmetic industries, has begun a custom filling operation at its own plant. The line will specialize in glass containers, but is also equipped to handle tinplate and other metal containers.

•

Thomasson Appoints Bigelow

Louis R. Bigelow has been named assistant sales manager of Thomasson of Pa., Inc., Norristown, Pa., custom filler. He had previously been a manufacturers representative specializing in aerosol products.

S. C. Johnson Announces Plans to Diversify Line

A "vigorous program of diversification," launched in 1954 and including a series of new aerosol products, has increased the domestic sales of S. C. Johnson & Son, Racine, Wis., by 56%. This fact was reported by H. F. Johnson, company chairman, in a year-end report on the company's activities.

"Sales in 1959 alone rose 21% over the preceding year and we forsee a further jump of about 10% in 1960," Mr. Packard said. He revealed that products introduced in the last six years currently account for about 56% of total sales; and include aerosol insecticides, air fresheners, a dusting wax (Pledge) and an automobile polish (Instant J-Wax). Among the products introduced during the course of last year he listed "Raid" flying insect spray and "Johnson's" upholstery foam cleaner.

"Our new product program will continue in 1960," said Mr. Packard. "One major entrant will be a unique auto care product that will provide motorists with the easiest method yet for transforming an unwashed car into a shiny vehicle."

The company's large Research and Development Division and 30 "sponsor groups" or product committees are working on as many new product possibilities, the Johnson executive stated, indicating continued emphasis on diversification.

Physical expansion has been accompanying growth in product output, he added. A $4-million building program began in 1959. A major part of it is a million-dollar aerosol plant nearing completion at the company's headquarters in Racine. It will contain manufacturing facilities and filling lines for production of pressure-packed products in the automotive, insecticide and furniture polish lines.

ConCan Revamps Plastics Div.

Continental Can Co. has set up a Plastic Bottle and Tube Division, with headquarters in Chicago. Charles F. Lenhard, formerly plant manager of the Chicago plastic bottle plant, has been named manager of the new division in charge of sales, production, and research and development in this field.

Previously, the responsibility for running the plastic bottle operation at its Chicago plant was assigned to the firm's Paper Container Division.

In addition to announcement of setting up the new division, it was disclosed that plastic bottle volume had developed to the point where Continental is planning to establish manufacturing facilities on the East and West Coasts, and at another location in the Midwest.

•

Washington FT Act Invalid

The Supreme Court of the State of Washington recently declared unconstitutional the fair trade act of that state. This reduces to 30 the number of states in which fair trade is now effective: Alabama, Arizona, California, Connecticut, Delaware, Hawaii, Idaho, Illinois, Iowa, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Tennessee, Virginia, Wisconsin, and Wyoming.

•

Michigan Forms Drug Div.

Michigan Chemical Corp., Saint Louis, Mich. last month announced the formation of an ethical pharmaceutical division and the purchase of a unit to provide manufacturing and sales facilities for the new corporate group. The division will be called Pharmich Laboratories.

The newly acquired company, Metropolitan Laboratories of Oyster Bay, N. Y., will continue to function under its present management. Specialists in injectable drugs, the company's line will be expanded to include ointments, liquids, tablets, and capsules.

Heading the new pharmaceutical division will be H. E. Mahony, with the title of operations director. He will head Michigan Chemical's production facilities at Saint Louis for the synthesis of new drug products, and will assist the staff of Metropolitan Laboratories in the production of professional pharmaceuticals. Mr. Mahony joined Michigan Chemical following 18 years with Merck & Co., where he was manager of the company's Elkton, Va. plant.

•

Harry Isacoff Honored

Harry Isacoff, 1958 chairman of the New York Chapter of the Society of Cosmetic Chemists, accepts a plaque in recognition of his services and leadership from Theodore Ostrowski, 1959 chairman (right).

•

Warn About Aerosol Snow

Aerosol snow spray can be poisonous to children who put it in their mouths, Arthur S. Blank, technical director of the Connecticut State Department of Health's Poison Information Center, warned recently. In a detailed report of the group's emergency telephone service for physicians, Mr. Blank reported that of the 62 calls for information, 50 were for children under five years of age. Substances responsible for the calls were: medications, 16; cleaning, polishing, and sanitizing agents, 14; cosmetics, 6; pesticides, 5; plants and berries, 3; solvents, 2; miscellaneous substances accounting for the 16 other incidents.

•

Gunther to Air-Wick Post

The Pepsodent Division of Lever Brothers, Inc., New York, has appointed Edward Gunther to the post of product manager for its "Air-Wick" line of room deodorants.

Glass Production Seen Rising

The glass container segment of the nation's $10 billion packaging industry will inaugurate the decade of the 'Sixties by producing an all-time record of 23 billion bottles and jars in 1960, a leading manufacturer predicted last month.

The record production, up 6% from 1959, will be the forerunner of a series of record-breaking years as glass container manufacturers develop lighter, stronger, more economical, and more convenient containers for carrying the products of the nation's drug, chemical, beverage, and food industries to market, Carl R. Megowen, president of Owens-Illinois Glass Co., Toledo said.

"Packaging in the 'Sixties belongs to those materials that can be tailored to fit specific needs as well as to companies that meet the challenge through research and development," Mr. Megowen said. "The versatile glass container is ideally equipped to handle the challenge and we expect to add to its value as a container through research."

"The decade just closing saw many new products added to the medicine chest, the pantry, the cleaning department, and the boudoir in the American home, many of them packed in glass bottles and jars," he added. "The 'Fifties brought an increasing trend toward greater self-service in grocer, drug, and other retail stores as well as greater use of both convenience items such as instant coffee, and a myriad of other 'instant' products, and economical, king-size containers. A large share of these, too, went to market in glass. Another significant development during the decade was the use of aerosol pressure packages."

•

Seidlitz-Davis Co.'s Merge

A merger of Seidlitz Paint and Varnish Co., Kansas City; and the H. B. Davis Co., Baltimore, was announced by spokesmen for both companies after five years of negotiations. The two companies and their subsidiaries will become part of a new corporation to be called Consolidated Coatings and Chemicals, Inc., with headquarters in Kansas City.

Spectacular in selling perfumes
Available for profitable new applications

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TRADEMARK

Purse-size aerosol

Get that important competitive edge with this glamorous dispenser... multiply sales by having your customers carry and use your product away from home!!

Refillable—long cap to prevent accidental activation—can be printed with your own designs—available in highly polished brass cap, plastic or low-cost coated paper tube.

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Burn Preparations
Poison Ivy Remedies
Spray Bandages
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Deodorants
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Reynolds Forms Research Div.

Packaging research at Reynolds Metals Co., Richmond, Va., has been centralized in a new Packaging Research Division. It will be made up of three principal departments — material research, directed by W. P. Andrews; sales development, directed by J. M. Fultz, and product development, with W. E. Cheeley as director. The new division will be headed by A. Irving Totten, Jr., as general director, with G. A. Rutledge as manager of product engineering.

The principal department of interest to the aerosol industry is the product development department which has the responsibility for developing aluminum cans.

•

PI Revamps Tech. Comm.

The Packaging Institute, New York, recently announced a number of changes in the top echelon of its technical committee. The Technical Operations Committee has adopted the title "Technical Coordinating Board" as being more descriptive of its activities. W. B. Tibbets, of the Development Department of Union Carbide Plastics Corp. was elected chairman of the technical coordinating board.

Also elected were new chairmen for each of the five divisions of the institute's technical committees. Stanton D. Smith, of the Plastic Sales Division of Dow Chemical Co., was named chairman of the Materials Division. R. J. Hennessy, of the Lederle Laboratories Division of American Cyanamid Co., is the newly-elected chairman of the Product Division. I. G. Nichol, of Morningstar-Paisley, Inc., is new chairman of the Production Division. Ernest A. Green of the Printing Ink Division of Interchemical Corp., is new chairman of the Printed Packaging Division. And Ira Gottscho, of Adolph Gottscho, Inc., is chairman of the Machinery Division.

•

Joslyn Named by Schueler

Schueler & Co., New York aerosol marketer, has appointed Fred M. Joslyn to be sales manager for its Medical Products Division.

Advertising Budget Deplored

The chemical industry is doing a poor job of keeping its marketing ideas abreast of the creativity of its researchers and scientists. This warning was voiced to a meeting of the Synthetic Organic Chemical Manufacturers Association last month by Ernest A. Jones, president of MacManus, John & Adams, Inc. In no other business, Mr. Jones charged, is the advertising dollar asked to do so many things as it is in the chemical industry.

The median proportion of sales invested in advertising for 112 chemicals companies surveyed, he reported, was only 1%. He explained that this 1% expenditure is relied on to "chaperone new products in unexplored, hostile territories" and that it must also support increasingly frequent corporate forays into the "retail jungle." Ineffective institutional advertising came in for a particularly stiff attack by Mr. Jones. "Too much of it," he charged, "is pompous, self-glorifying stuff as mixed up as a dog's breakfast."

" I cannot think of any other commercial endeavor that depends so largely on public faith as does the chemical industry," he said. "The chemical industry should not take its miracles to market in a horse and buggy."

•

Colgate Names Tosh, Major

A Kenneth Tosh has been appointed quality control manager for the Household Products Division and John Major has been named to succeed him as quality control manager for the Toilet Articles Division of the Colgate-Palmolive Co., New York.

Mr. Tosh joins the Household Products Division after having served as toilet articles quality control manager for the past two years. In his 28-year career with Colgate-Palmolive, he has held many technical posts. Mr. Major joined the company in 1951 as a senior project chemical engineer in the Research and Development Department. In the ensuing years, he held supervisory positions in research and development and later in toilet articles quality control.

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VALVES & DUST CAPS

Super Whip has a complete line of foam and food valves. Our variable orifice assures perfect rate of flow control. It gases faster than any valve on the market thereby increasing production speed. Its fingertip control will delight the housewife. Our laboratory can put up your samples.

Super Whip E Z lift dust caps put an end to prying, pulling and squeezing. A slight press of the finger and the E Z lift dust cap is off. It will not break, and is *reusable*. Eliminates product and gas discharge from accidentally striking nozzle when removing dust cap.

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Most aerosol perfume compounds are suitable for a very limited number of end products.

Here, however, is one almost universally suitable perfume

BOUQUET FOR AEROSOL S7746

$7.00 lb.

A fresh light fragrance with citrus overtones

Excellent in

Room sprays
Hair sprays
Personal deodorants
Suntan preparations
Shaving cream
Colognes
Sachets (meaning used alone with propellants)

Write us on your firm's letterhead for a sample.

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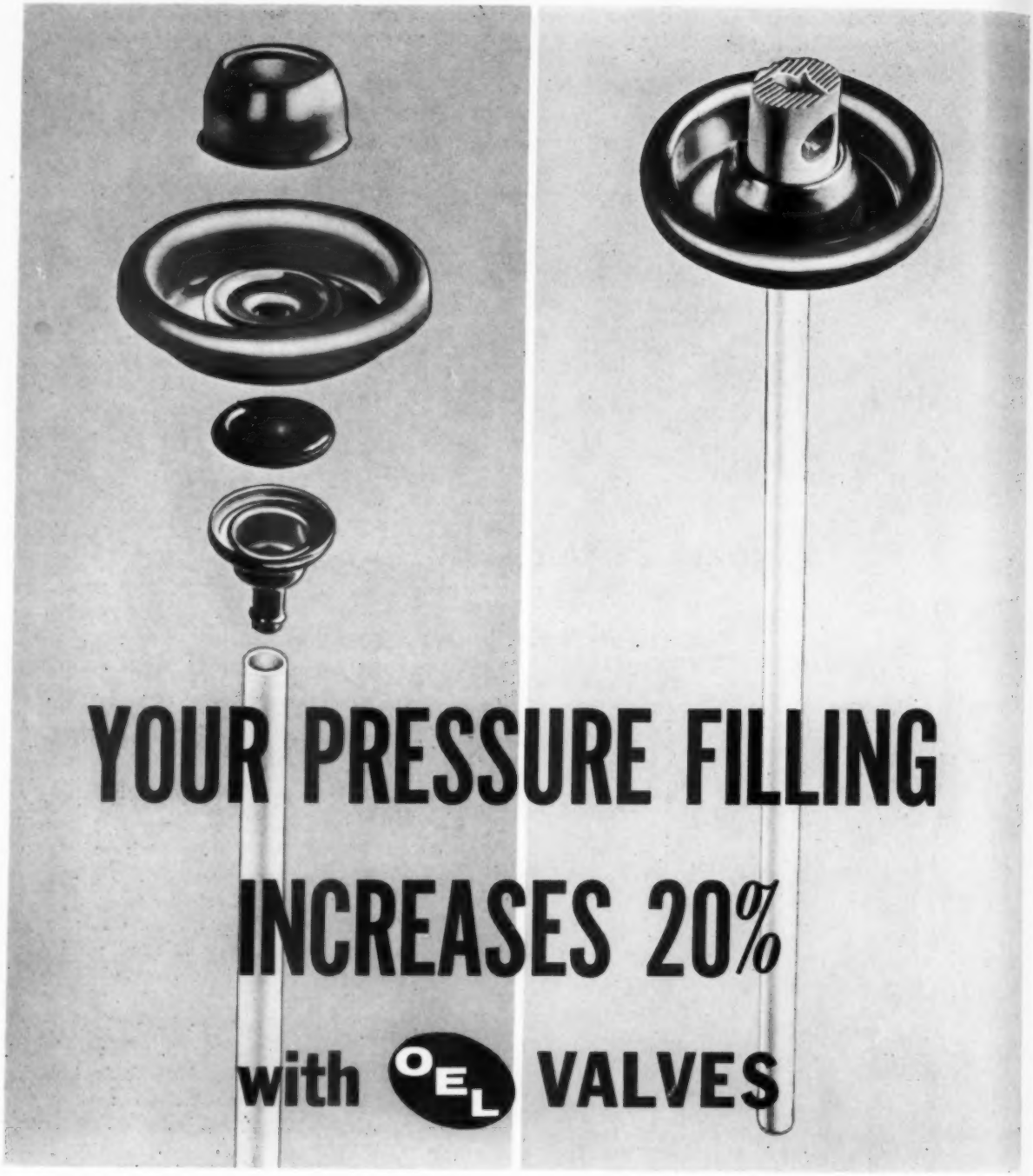


YOUR PRESSURE FILLING INCREASES 20% with OEL VALVES

Build up your *profit margin!* Look into the cost saving advantages of OEL AEROSOL VALVES, now used for all spray and foam products.

OEL exclusive internal design provides maximum filling area, unmatched in the industry. This increases pressure filling output at least 20% without changing your present equipment.

Prove it to yourself. Sample valves are available for your test.

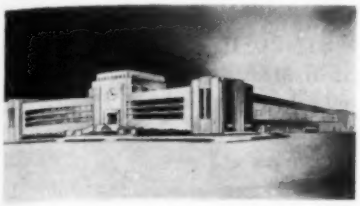
Other advantages—universal valve simplifies inventory control—adaptable for all products—exclusive retainer eliminates button loss.

OIL EQUIPMENT LABORATORIES, INC., 600 PEARL STREET, ELIZABETH, NEW JERSEY

OEL — *originators of modern pressure filling techniques*

Fleuroma Plans New Plant

Fleuroma, Inc., producers of perfume oils and aromatic chemicals, last month announced purchase of land



and building at 43-23 Dreyer Ave., Long Island City, N. Y., which will be redesigned and converted to the company's main plant and central administrative offices. Included in the 90,000 square feet of plant space will be extensive perfume laboratories for the company's creative perfume staff.

Transfer of Fleuroma's staff from its present headquarters at 38 West 21st Street, New York, is expected to be completed late this Spring. Within the last 16 months the company has established plants and facilities at Sao Paulo, Brazil, and at London and Paris.

•

Dick Tracy Uses Aerosols

An aerosol insecticide was used effectively by Dick Tracy, cartoon detective in Chester Gould's nation-

ally-syndicated comic strip (for Sunday, Jan. 17), to capture "Fifth," a criminal so named because he repeatedly takes the Fifth Amendment when asked any question. Fifth, armed with a shotgun, is holed up in a bullet-proof projection booth, with only a slot-like aperture through which he shoots. Tracy picks up an insecticide aerosol and empties the contents into the booth, overcoming Fifth and causing him to drop his weapon.

•

Ohio Chem. Marks 50th Year

The Ohio Chemical & Surgical Equipment Co., Madison, Wis. (now a subsidiary of Air Reduction Co.) this year celebrates its 50th anniversary. Founded primarily as a producer of anesthetics and other medical gases, the company is now a prime producer of compressed gases for aerosol packaging.

•

Mondart Joins Drug Association

On the strength of its "Max Instant Cold Relief", an aerosol product to kill airborne cold and influenza viruses, Mondart, Ltd., English aerosol marketer has been accepted as a member of the Proprietary Association of Great Britain.

SCA Appoints Schopflin

Jack Schopflin, formerly president of E. S. Miller Laboratories, Inc. has been named Western Region account executive for Strong Cobb Arner Inc. He will make his headquarters in Pasadena, Calif. and will represent SCA in the 11-state area of California, Oregon, Washington, Montana, Idaho, Nevada, Arizona, Utah, New Mexico, Colorado, and Wyoming. He has sales and customer service responsibility for all SCA services, research and production of custom-manufactured pharmaceutical and allied chemical products, including aerosol packaging by PanPak, Inc., a wholly-owned subsidiary.

Mr. Schopflin was vice-president of the George A. Breon & Co. prior to its acquisition by Sterling Drug in 1946. From 1947 to 1950, he was manager of the finished goods division of Hall Brothers, Inc., Kansas City. He joined the E. S. Miller Laboratories, Los Angeles, in 1950 as vice president and general manager, and was elected president in 1957.

Equipment— Processes— Bulletins—

New Pinked-Cut Tubing

Anchor Plastics Co., Long Island City, N. Y., has announced completion of its development work on com-

pletely automatic, mass-production machinery to fabricate pinked-cut aerosol dip tubes. Pinked tubes are used to assure that the dip tube never "closes-up" against the bottom of the container.

Whereas formerly tubes had to be cut slightly shorter than absolutely necessary in order to eliminate "closing-up," dip tubes can now be made the length of the container, assuring full use of the contents by the consumer. Pinked-cut tubes are supplied stack-packed in corrugated boxes ready for the assembly line.

"Aeroflex P" crack-resistant formulation is used for the manufacture of these tubes, which can be specified in any diameter and wall thickness to fit all aerosol valves.

•

Sensory Panel Booklet

Foster D. Snell, Inc., New York, has just released a new booklet describing the uses of sensory panels. Sensory panels are valuable in the evaluation of foods and beverages for odor and flavor, and for aid in formulation. Panels are useful in flavor research, the evaluation of packaging material, and in the investigation of off-odors and flavors. Copies of the booklet may be obtained from Foster D. Snell, Inc., 29 West 15th Street, New York 11, N. Y.

•

AMA Offers Packaging Book

"Packaging for Sales and Shipment," a new 155-page book detailing approaches by executives of leading companies to modern packaging problems, has been published by the American Management Association, 1515 Broadway, New York 36. Costing $3.75, the book is based on material originally presented at the AMA's 1959 National Packaging Conference in Chicago. Included are papers on new uses for aerosol containers and the use of aluminum as a can making material.

•

New Onyx Surfactant

Onyx Oil & Chemical Co., Jersey City, N. J., last month announced a new surfactant, called "Maprofix ES," which it says has excellent detergent, wetting, dispersing, and foaming properties. The surfactant, sodium lauryl ether sulfate, is said to have an extremely low cloud point and high tolerance to calcium and magnesium ions. Suggested applications include cosmetic, pigment suspension, and latex emulsions.

•

New Volumetric Filler

The "Whiz Packer," a new volumetric filler for free-flowing non-liquid products, has been announced by Frazier and Son, 20 Industrial West, Clifton, N. J. The unit handles containers up to five pounds with accuracy within 1/10th of a gram.

•

New Chemical Index

"Index Chemicus," a monthly index of some of the 50,000 new chemicals reported each year in the scientific literature, will be published by Eugene Garfield Associates, 1122 Spring Garden St., Philadelphia 23, sometime early this year. The publication will contain listings of chemical names, structural diagrams, and molecular formulas.

•

New Particle Size Book

SYMPOSIUM ON PARTICLE SIZE MEASUREMENT, 308 pages, published by American Society for Testing Materials, 1916 Race Street, Philadelphia 3.

A new symposium containing 18 papers on particle size measurement has been issued by the American Society for Testing Materials. Though not directed toward problems of *aerosol* particle measurement, some of the techniques described can be applied in the aerosol laboratory, particularly to measure pharmaceutical product effectiveness in the respiratory tract.

Included in the contents are the following papers:

The Mechanics of Fine Sieving — K. T. Whitby

Application of Electroformed Precision Micromesh Sieves to the Determination of Particle Size Distribution — H. W. Daeschner, E. F. Seibert, and E. D. Peters

Methods of Particle-Size Analysis — R. P. Loveland

Sedimentation Procedures for Determining Particle Size Distribution — W. F. Sullivan, and A. E. Jacobsen

Centrifuge Sedimentation Size Analysis of Samples of Airborne Dusts Collected in Membrane Filters — K. T. Whitby, A. B. Algren, and J. C. Annis

A Liquid Sedimentation Method for Particle Size Distributions — L. M. Cartwright and R. Q. Gregg

Determination of Particle-Size Distribution by Examining Gravitational and Centrifugal Sedimentation According to the Pipet Method and With Divers — S. Berg

A Photoelectric Sedimentation Method for Particle Size Distribution Measurements — C. T. O'Konski, M. D. Bitron, and W. I. Higuchi

Turbidimetric Particle Size Distribution Theory: Application to Refractory Metal and Oxide Powders — A. I. Michaels

Electronic Size Analysis of Subsieve Particles by Flowing Through a Small Liquid Resistor — R. H. Berg

The Determination of Particle Size by Adsorption Methods — R. J. Fries

A Study of the Blaine Fineness Tester and a Determination of Surface Area from Air Permeability Data — S. S. Ober and K. J. Frederick

A Discussion of the ASTH Recommended Practice for Reporting Particle Size Characteristics of Pigments (D 1366) — J. H. Calbeck

The Stanford Research Institute Particle Bank — R. D. Cadle and W. Thuman

List of ASTM Standards for Particle Size Measurement.

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the answer to all
LIQUID, CREAM and FOAM
pressurized dispensing

Clayton

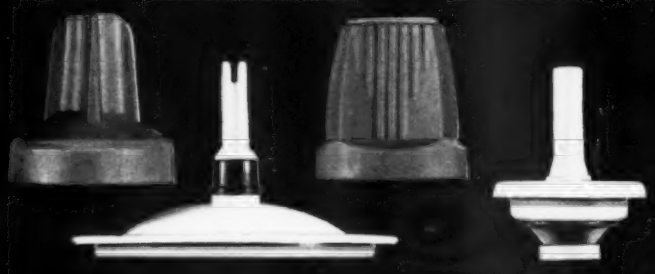
"NOZZLE DOWN"
dispensing valves and covers

TIME TESTED AND PROVED
ON HUNDREDS OF MILLIONS OF CONTAINERS

COSMETIC, PHARMACEUTICAL, PERSONAL, AUTOMOTIVE, HOUSEHOLD — OR FOOD . . . whatever your product, liquid, cream or foam . . . CLAYTON NOZZLE DOWN VALVES will dispense it more efficiently, more naturally . . . pointing the product where you want it . . . never clogging, always staying intact. Various types and designs are available with suitable flow rates and materials to meet your specific product requirements.

Superior in production, all CLAYTON VALVES assure uniform gassing . . . pressure-fill at highest speeds. No parts to assemble in your plant. Dependable in shipment . . . components can't come apart. Distinctive, patented positive-action screw covers keep your product safe.

CLAYTON NOZZLE-DOWN VALVES ARE THE MOST FAMILIAR, ACCEPTED, PREFERRED AND CONSISTENTLY BOUGHT VALVES FOR FOAM PRODUCTS . . . THE MOST EFFECTIVE FOR ALL CREAM AND LIQUID PRODUCTS!



ALL VALVES AVAILABLE WITH COLOR-ENAMELED MOUNTING CUPS. HIGHEST QUALITY, CHEMICAL AND CORROSION-RESISTANT INTERIOR COATINGS!

DIP TUBE VALVE

The best available! Dispenses with forward or downward push. Gasses and dispenses uniformly. Pressure fills at highest speeds. No metal valve parts exposed to product.

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WRITE, PHONE OR WIRE US FOR COMPLETE DETAILS!

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Pyrenone Formulation Aid

A new Pyrenone "Facts Finder," a 20-page guide for manufacturers, insecticide formulators, pest control operators, and entomologists, has been prepared by Fairfield Chemicals, Food Machinery and Chemical Corp., New York, complete with a unique revolving calculator, insect identification table, formulary data, and performance charts, the new guide identifies and describes 33 insects and pests commonly encountered in home, industry, and farm situations.

The disc calculator gives specifications for Fairfield concentrates, and also provides the percentage by weight of pyrethrins and piperonyl butoxide when 12 different Pyrenone concentrates, and five other concentrates are diluted in ranges from 0.1% to 20.0%.

Pyrenone liquid spray performance is described by performance charts summarizing years of laboratory Peet-Grady testing that show insecticide performance of Pyrenone concentrates at various dilution levels.

Included are suggested sprays, emulsions, and aerosol insecticides for the home, garden, factory, livestock, grain, storage, and food processing plants. Formulations include Pyrenone, Fairfield combination of pyrethrins and the synergist, piperonyl butoxide. The toxicant is recommended for use against resistant insects and around foods, meat and dairy animals.

Insect resistance, an increasingly important factor in insect control, is covered with a report of Fairfield's national survey of housefly and roach resistance. The first national survey of its kind, the report includes maps showing a state by state picture, and suggested formulae for resistant insect control.

Designed for use as a day-to-day technical and informative tool for formulators and others working in the field of insect control, the "Facts Finder" is priced at one dollar. Copies may be obtained from the company at 441 Lexington Avenue, New York 17, New York.

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Du Pont Offers Shopper Survey

The average family shopper in the 30,000 supermarkets in the U.S. is a well-educated young homemaker in a family of four with a total income of $100 a week. She makes three weekly trips to the store, spending an average

(*Continued on Page* 91)

a truly complete service
...from the oldest and leading custom-loaders of aerosol specialties

Sprayon has handled the greatest possible variety of contract-loading assignments for many of the nation's largest manufacturers. This experience, plus Sprayon's outstanding engineering and production facilities, is your best means to a commercially successful aerosol package. Problem product or routine product, get Sprayon's dollars-and-cents answer to your next loading job.

Sprayon
PRIVATE LABEL AEROSOLS

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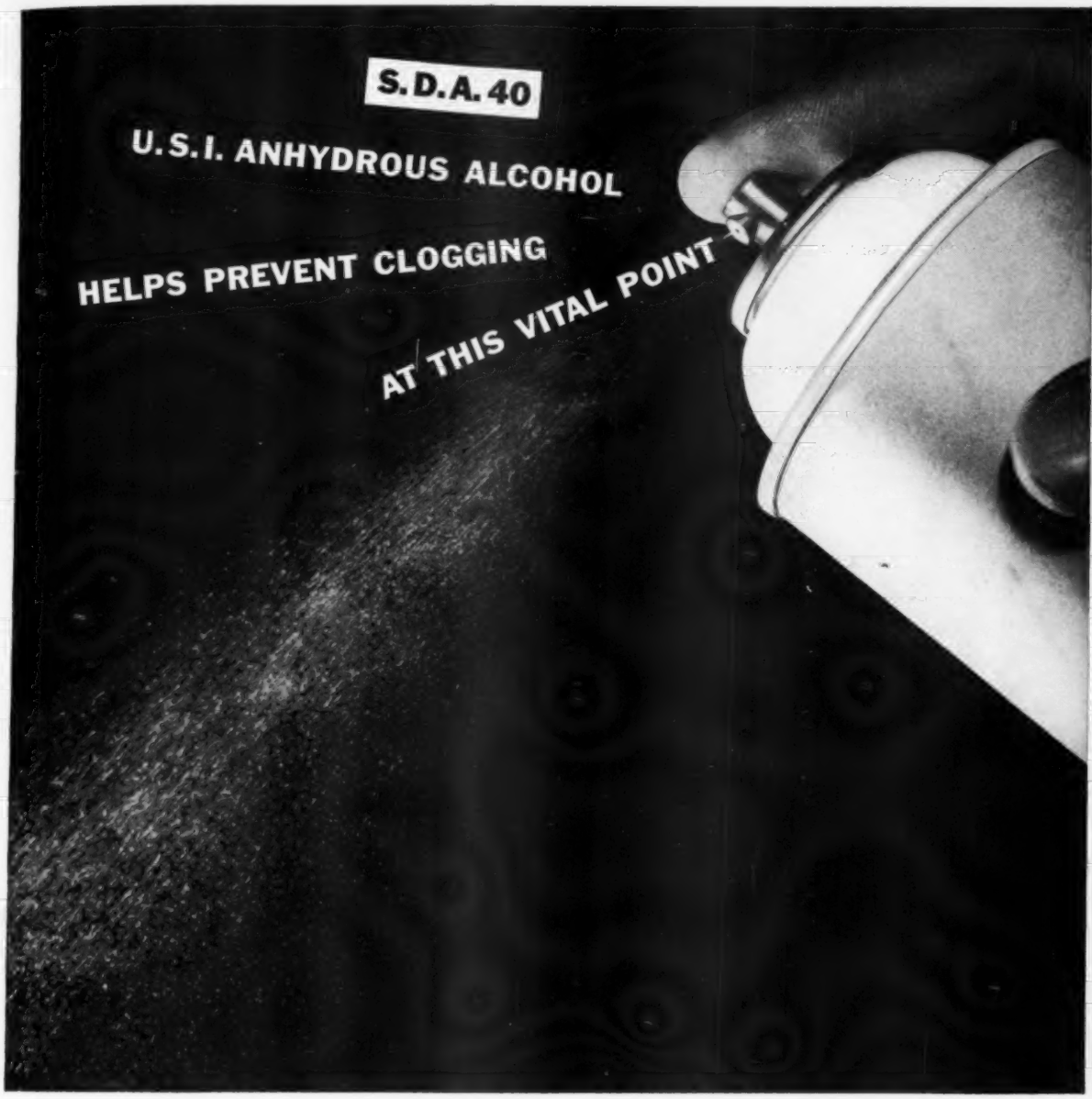


The experience of more than a decade shows that for formulas requiring ethyl alcohol, U.S.I. anhydrous (water-free) S.D.A. 40 helps prevent clogging of the valve . . . a fact that takes on more and more importance as competition increases among aerosol products.

Furthermore, U.S.I. anhydrous S.D.A. 40 contributes to a steady spray rate and promotes even particle distribution. This results from its outstanding compatibility with a great variety of concentrates.

Because U.S.I. anhydrous S.D.A. 40 is free of water, water-corrosion of containers is eliminated as is water-insolubility of aerosol ingredients. The formula is produced under rigid quality controls that assure uniformity of specifications. Nationwide distribution assures you of prompt service and delivery of tank, drum or 5-gallon quantities.

If you have a specific aerosol problem perhaps a U.S.I. Technical Service representative can help you find a practical and economical solution. Write for technical data and prices.

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.
Branches in principal cities

KING SIZE CYLINDERS

For working pressure up to 240 psi • ICC Approved • Quantity Production sizes include 2, 3, 5 and 10 pound water capacity • Other sizes on request.

NEW SPHERICAL DISPOSABLE CONTAINERS

For working pressures up to 1750 psi • ICC Approved • Various sizes.

Millions of TMC disposable containers are building sales in this new merchandising era

TMC Disposable Containers are produced in large volume, built to standards that fit automatic filling machines. They may be the solution to the packaging and marketing problems of your old or new products.

WRITE or phone for prices; give size, pressure and quantities required. Ask for helpful Selection Guide No. DC-559.

TUBE MANIFOLD
CORPORATION
419 BRYANT STREET • N. TONAWANDA, N. Y.

Doctors Warn About Suntan

The suntan fad in the U. S. is becoming a serious medical problem, a group of skin specialists told the annual meeting of the American Medical Association in Dallas recently. As a result of this, it was pointed out, increasing numbers of people are risking long-range effects of skin cancer and premature aging of the skin, in addition to painful and dangerous sunburn.

Chemical sunscreens are probably the best protective measure available to the general public, it was stated. These chemicals, which filter out the harmful ultra-violet rays in sunlight, are called benzophenones. Dr. John M. Knox, a dermatologist at the Medical College of Baylor University, estimated that some of the better of these chemicals will increase the length of time it takes to get the beginnings of a burn by 50 to 100 times.

The potential market for such sunscreens is relatively untouched, the doctors advised. Plough, Inc., Memphis, a major marketer of such products, calculates the entire suntan lotion market runs close to $30 million a year, only about 20% of the potential market.

•

Gordon to Onyx Oil

Norman Gordon has been appointed to the sales staff of the Onyx Oil & Chemical Co., Jersey City, N. J. He will be assigned to the Chicago office and will call on accounts in Missouri, Kentucky, Kansas, Arkansas and Oklahoma.

Mr. Gordon received his B. S. in chemistry from Northwestern University and was formerly with Polak & Schwarz.

•

Gen. Chem. Names Romito

Virgil A. Romito has been named to the position of production director of the General Chemical Division of Allied Chemical Corp., New York. Joining the firm in 1933, he served for five years as manager of the divisions, Delaware Works (North Claymont, Del.) prior to his promotion last year to division maintenance manager.

Punch Chides Aerosol Industry On Labels

THE Dec. 23 issue of *Punch*, leading British humor magazine, in the person of writer Patrick Ryan, took a tongue-in-cheek swipe at some of the precautionary labeling practices of the aerosol industry:

"I was hanging around my wife's dressing-table the other day, trying to find out where she keeps her money, when I had the fear put straight up to me by a can of hair-spray.

"It was a pretty red tin modestly labelled 'Greatest Scientific Advance —Two Years Ahead'. Ahead of what, it didn't say, but I supposed women knew.

"Press the valve firmly, the instructions said, and once you've sprayed your hair 'It can't go limp. . . . It stays alive . . . It can't fly away'.

"My hair has been flying away since I was sixteen and I am now so bald that Yul Brynner is suing me. So I gave myself a quick blow-over with the 'Greatest Scientific Advance' before anyone came up and caught me.

"It didn't bring any hair alive but it gave my deserted bonce a lovely surface-sheen. Another coat, a buffing with a silk handkerchief and you could have shaved yourself in it. Or hired me out as a human heliograph.

"I was shaping for the top-coat when I noticed the last of the instructions.

"'Avoid Spraying Near the Eyes—Do Not Use Near Fire or Flame—Keep Away from Excessive Heat—Do Not Incinerate Container'.

"I put the can down before it blew up or blinded me. It was the last doom-ridden warning that did for me. 'Do Not Incinerate Container.' Even as a dead man that hair-spray could still blow you over the compost heap. I realized then that what that stuff was Two Years Ahead of was the hydrogen bomb.

"I looked along the serried ranks of cosmetics on the dressing-table and reflected on the dangers women brave to please the male. Every other jar in that array had a label telling you to stand well back, son. Given half a pint of botulinus toxin we'd be all set for germ warfare."

Hoechst Increases Production

Farbwerke Hoechst AG., Frankfurt-Hoechst, West Germany, the leading producer of fluorinated hydrocarbons on the European continent, last month announced expansion of its "Frigen" plant in order to meet the increasing demands of its domestic and foreign markets for aerosol propellants and refrigerants.

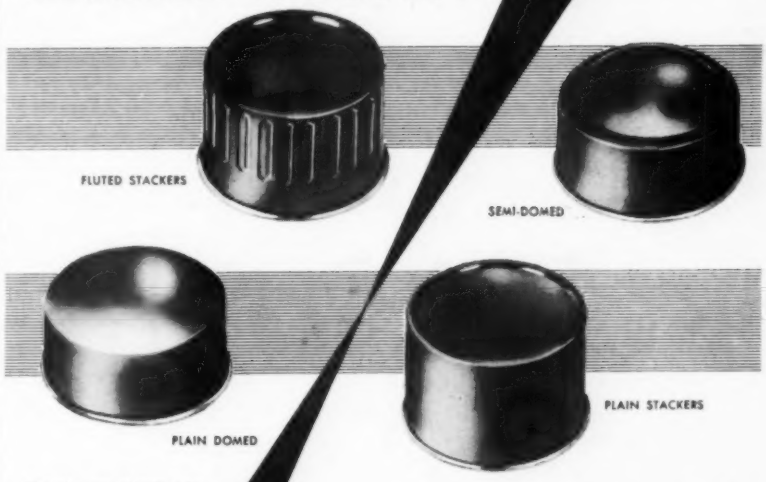
The new "Frigen" installation consists of a steel skeleton construction 105 feet high with a ground floor and five stories covering an area 145 feet by 82 feet. Except for the areas containing the compressors, the switchboard, the instrument controls and the stairway, the plant is not enclosed. The new plant is about to start production.

■

Burleson to Reynolds Post

With a view toward increasing the use of aluminum cans, Reynolds Metals Co., Richmond, Va., recently created a new position — product director for aluminum cans and rigid foil containers. To fill the post the company named M. Neal Burleson, former manager of Reynolds' aluminum can marketing group.

NOW...
SUPERIOR SERVICE
for the
AEROSOL INDUSTRY



We also manufacture tin plate Screw Caps from 18mm to 120mm.

PENN, known for finest service to the bottling industry for over 25 years, is now making tops for aerosol containers.

All of Penn's customers receive superior service and careful attention on every order. You are assured of top quality workmanship, the right price and immediate delivery.

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Double Your Production with
THE AMCO HAND CRIMPER
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1. Manually operated, short stroke and multiplied leverage lessen operator fatigue.
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3. Keyway guided head keeps crimper jaws centrally aligned for all can heights.
4. Convenient . . . can be mounted anywhere.
5. Completely enclosed for safety . . . no moving parts exposed.
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Immediate delivery from stock. Guaranteed for 90 days. Write for literature.

AMCO **AEROSOL MACHINERY CO.**

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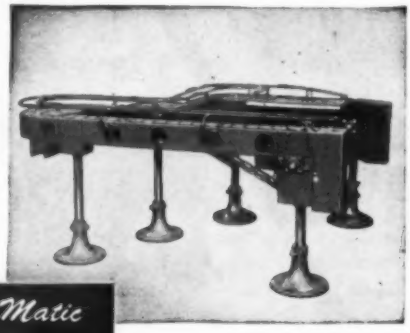

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KEEPS PRODUCTION FLOWING SMOOTHLY

A VERSATILE, economical unit for the food, dairy, beverage, etc. field. Conveys in straight line, around curves (0° to 180°) and up or down normal inclines or declines. Available in steel or stainless steel, with or without pack-off tables. Only one power unit is needed as there are no corner brackets.

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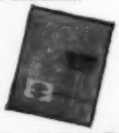
about this flexible, smooth operating unit that lowers costs and increases production. Ask for Bulletin No. ST-3c Dept. AA-2



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New Overall FLATTOP

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725 N. Haven St., Baltimore, Md.

Millot Reshuffles Sales

F. Millot, New York marketers of aerosol colognes and bath powders, recently announced several changes in its sales staff. James A. King, former sales coordinator, was named assistant to the president with responsibilty for coordinating and developing all marketing functions. Robert A. Nielsen, former Midwest sales representative, was appointed sales manager. John E. Graham, Jr. was named Southeast sales representative and Arlon Kennemer was appointed Southwest sales manager.

•

O-I Plans New Glass Plant

A new, multi-furnace glass container plant will be erected on a 70-acre site at Brockport, N. Y. this year by Owens-Illinois Glass Co., Toledo. Occupying approximately 300,000 square feet, the plant will be highly automated. It is Owens-Illinois' 18th for the manufacture of bottles and jars.

Ground will be broken for the new plant some time this year, with completion scheduled for 1961.

•

Huisking Marks 50th Year

Chas. L. Huisking & Co., New York, observing its 50th anniversary this year, last month announced plans for further expansion of its facilities. The firm, which began business as an exporter-importer of drugs, chemicals, cod liver oil, essential oils, and other raw materials, today also manufactures pharmaceuticals, and specialty chemicals.

Among its subsidiaries are Clintbrook Chemical Co., Conti Products Co., the Peder Devold Oil Co., and the Glyco Chemicals Division. The company was founded by Charles L. Huisking in 1910, and is presently operated by his three sons: William W. Huisking, president; Edward P. Huisking, vice-president in charge of operations; and Richard V. Huisking, secretary. The founder, Charles L. Huisking, continues to take an active part in the firm's operations as board chairman.

•

F. O. Haas to Head R&H

Rohm & Haas Co., Philadelphia, last month named Dr. Fritz O. Haas, former executive vice-president, to be president and chairman of the company's executive committee. He succeeded his father, who died several days after the executive changes.

Otto Haas, founder and honorary board chairman of Rohm & Haas, died the same week he retired as chairman of the firm's executive committee.

Mr. Haas, a native of Germany, came to the U. S. in 1902 and in 1905, in the wake of his discovery of a new leather processing material, formed the company in partnership with Dr. Otto Rohm, another German.

Dr. Ralph Connor succeeded the late Mr. Haas as board chairman and continues as research vice-president and a member of the executive committee. John C. Haas was named to the board of directors.

PFW Holds Annual Sales Meeting

PFW, Inc., Monticello, N. Y. producer of essential oils and aromatic chemicals, last month held its annual sales meeting at a country club near the firm's headquarters. Sales representatives from all over the U. S. and from PFW's European headquarters attended.

AEROFLEX® "P" DIP TUBES

- QUALITY CONTROLLED—Every shipment laboratory tested for crack resistance.
- Ideal for aerosols, atomizers, squeeze bottles and lotion pumps.
- Odorless, non-toxic, resistant to most filler and propellant chemicals, crack resistant through ANCHOR's exclusive formulation of polyethylene.
- Close tolerances maintained. Precision cut and stack packed tubes available.
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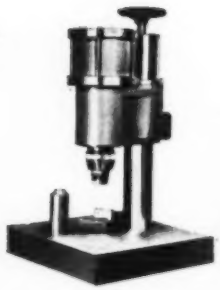
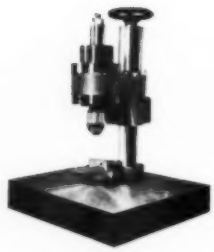
1. Laboratory Clincher DP-104 Inter-changeable Tools for Metal Cans and Glass Bottles.

2. Laboratory and Small-Run Pressure Loader DP-110

3. Propellant Pump WM-DP 385 Fully automatic, compressed air operated. Empties cylinders, mixes propellants, guarantees liquefaction.



4. Valve Clincher WM-DP 350 Semi-automatic, compressed air operated. Capacity: 28-30 per min.



5. Nitrogen Gasser WMP-DP 390 Semi-automatic, compressed air operated. Capacity: 28-30 per min.

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Kafertaler Strasse 162
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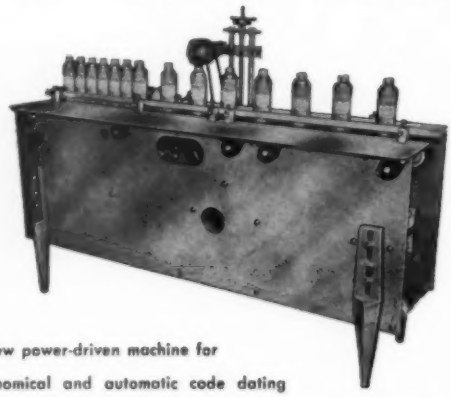
Aerosol Container
CODE DATING MACHINE



a new power-driven machine for economical and automatic code dating the concave bottoms of pressurized cans or flat bottoms of other round containers with work table area. Will mark top, bottom, or both at the same time.

Send details on your specific marking problems. Literature available on all types of applications.

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Inquire about rates and reader studies to

Advertising Manager
Aerosol Age
P.O. Box 31 **Caldwell, N. J.**

Equipment & Bulletins

(*From Page* 84)

of $7.74 each time. She shops nearly half an hour on each visit, and usually has no written list or simply a few items jotted on a scrap of paper.

This image of the typical American family shopper is drawn from a new study of supermarket buying habits just announced by the Du Pont Co. It is the sixth and most detailed of a continuing series started 25 years ago by the company's Film Department, and is available on request from Department BH, Film Dept., Du Pont Co., Wilmington, Del.

One of the most significant facts in the survey is that the average shopper now spends much more time rolling her cart up and down the aisles than she used to — 27 minutes today versus 18 minutes five years ago, as recorded by a similar Du Pont study. Yet she buys only one additional item—an average of 13.7 now against 12.7 then.

•

European Proceedings Available

Complete proceedings of the first International Symposium on Aerosols, held June, 1959, in Paris, are available in a special issue of the French trade periodical *"Parfumerie Cosmetique-Savons."* Included is the complete text and illustrations (in French) of all the technical papers given. The special October issue of the magazine, which includes the proceedings, costs 800 Francs in France and 900 Francs for copies to be mailed outside that country. Persons wishing the issue should write the Editor, Parfumerie-Cosmetique-Savons, 28 rue Saint Dominique, Paris 7.

•

Onyx Offers New Reprint

Copies of a paper titled "New Developments In Sanitizers And Disinfectants" have been reprinted by the Onyx Oil & Chemical Co., Jersey City 2, N. J.

This paper was presented by Dr. Arnold Lada, Onyx's chief of technical service at the November convention of the Canadian Manufacturers of Chemical Specialties Association, held last month in Toronto. Copies of the paper may be obtained upon request.

•

New Plastic Container Material

A new plastic compound is being developed for use in Germany for the manufacture of aerosol containers. The compound, which is a polycarbonate-type resin, is said to possess excellent resistance to chemical attack, and can be used at temperatures ranging from —100°C. to plus 135°C. A report appearing in the *Financial Times* of London does not identify the company doing research on the new container material.

•

Diazinon Formulation Sheet

A formulation leaflet offering information about use of Diazinon for residual household sprays has been prepared by the Geigy Agricultural Chemicals Division of Geigy Chemical Corp., Ardsley, N. Y. Included is a sample label giving active ingredients, precautions, and directions for use.

Plant Location Folder

A folder, entitled "At Your Command," which outlines plant location services available to industrial executives, has been issued by the Niagara-Mohawk Power Corp., 310 Erie Blvd. West, Syracuse, N. Y. Developed as an aid to industries considering new plant locations, the folder lists specific services available to industry through Niagara Mohawk.

Another booklet, this one a 28-page booklet listing the advantages of upstate New York for industrial location, is also available from Niagara Mohawk Power.

•

"Isotron" for Foam Blowing

Blowing urethane foams with fluorinated hydrocarbons, a method which is growing in popularity because of the economy and uniformity of foams it produces, is presented in a new publication by Pennsalt Chemicals Corp., Philadelphia. Entitled "Blowing Foams with Isotron," the brochure discusses recent developments in foam making techniques.

Elected Essential Oils Pres.

Robert E. Horsey, vice-president of Givaudan-Delawanna, Inc., New York,

Robert E. Horsey (photographed during the SCC meeting in December).

last month was elected president of the Essential Oil Association. Also elected were E. Langenau (Fritzsche Brothers), first vice-president; F. F. Dittrich (Ungerer & Co.), second vice-president; and secretary-treasurer, E. Manheimer (J. Manheimer). Mr. Horsey succeeded Gert Keller, president of Schimmel & Co.

•

Du Pont Cuts Delrin Price

The Polychemicals Department of E. I. du Pont de Nemours & Co., Wilmington, has cut the price of Delrin acetal resin from 95 cents to 88 cents per pound in 20,000 pound shipments. The resin is used in the fabrication of aerosol containers, certain valve parts, and other packaging components. According to DuPont, "this action confirms our announced intention of reducing the price of this new versatile plastic early in its commercial life. It is expected that as markets for this new engineering material increase, greater production will spur lower prices."

Editor's Mailbag

(*From Page* 14)

Todd Jr. and Dr. Hans Laube and would like to emphasize two substantial differences between the two processes.

Smell-O-Vision does not use aerosols nor fluorinated propellants. It atomizes fragrances by using compressed air. From a mechanical viewpoint the other principal difference is that Smell-O-Vision employs perforated pipes running down each aisle of seats with orifices spaced at equal distances from each seat. This assures that each person in the audience is exposed to each odor at the same time.

"Scent of Mystery" using Smell-O-Vision had its premiere last month in Chicago and the responses of many critics and of the writer were generally favorable.

R. Pantaleoni
President
ALPINE AROMATICS, INC.
Metuchen, N. J.

•

To the Editor:

As the principal manufacturers of aerosol filling machines in the United Kingdom, we were somewhat surprised at the article in your November issue (an interview with Brian Kirk), which implied that British aerosol fillers are buying U. S., Swiss, and German filling machinery in large quantities.

This is not strictly accurate. In fact, the majority of fillers in this country use our machines, and we have also made shipments abroad to fill export orders from eight different countries in the last four months.

D. Asdell
Director
AEROFILL LTD.
Perivale, England

Editor's Note: Further comment on the Aerofill equipment is included in the "Aerosols in Great Britain" column on page 30.

•

Coty Names Product Manager

Coty, Inc., New York aerosol marketer, has named Elizabeth Holloway as a product manager in its Marketing Division. She was formerly with Revlon, McCann-Erickson, and Style, Inc.

New Fuller Plant

(*From Page* 25)

president, opened the plant by dusting off the welcome mat with a new broom from the production line. "The new plant is a monument to salesmanship", the elder Fuller declared. "With billions of dollars devoted to research, and automatic machinery to change production methods, we shall see more new products and greater quantities of familiar products during the next decade than ever before in business history."

The company was founded by Mr. Fuller in 1906 as a door-to-door sales firm specializing in high quality

SCREW on TOP for GLASS and METAL AEROSOL CONTAINERS

Used to make refillable glass and metal Aerosol Containers

Will fit coated and uncoated bottles. If you have a special bottle send a sample to make sure of fit.

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we will fill only for customers and market no product line of our own

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AEROSOL PACKAGING to fit YOUR PRODUCT

• No minimum run required and no maximum limit! Rigid quality control is maintained on all production, contract filling or custom packaging.

CHASE PRODUCTS CO.
Maywood, Illinois

brushes. In the early Forties, such chemical specialties as floor waxes and polishes, cleaners, and disinfectants were added to the line; and in 1948, cosmetics were added. Aerosols were added to the product line in the early Fifties and Fuller Brush is believed to be currently one of the two or three largest volume sellers of pressurized products in the U. S.

The company's sales volume has risen from $8500 in 1906 to more than $100 million annually. An industrial division of the company makes machine tools, radar parts, and air compressors, in addition to industrial brushes and power brushes. The company covers the Canadian market from headquarters in that country at Hamilton, Ont.★

•

DuPuis to General Foods

The General Foods Corp., New York, last month named Dr. Robert N. DuPuis to the post of vice-president for research. He was formerly vice-president for research and development for Philip Morris, Inc., cigarette manufacturers. In his new post he succeeded Roy H. Walters, who was named vice-president for corporate technical development.

•

New FTC Charges

(*From Page* 65)

of the industry that the services of the Board of Standards of the TGA are available for a pre-check of advertising claims and programs as well as labeling. Some months ago we extended this service to non-members as well as to members and this extension still stands. In addition, we are prepared to scan television spots and commercials if arrangements can be made for them to be shown in New York. It is manifestly impossible for us to scan those originating in other more remote parts of the country. I would strongly urge all members of the industry to submit their advertising in advance to our board of standards. The operation is completely secret and no competitor will ever know anything about it, even the fact that

the copy has been submitted to us for review. Our record so far is 100% and no labeling or advertising copy which we have reviewed has ever been made the subject of a complaint by either the Food and Drug Administration or the Federal Trade Commission. This service has been in operation for more than 20 years.

"This situation is likely to become more acute and to continue for some time. It is not something, in my personal opinion, that will die down immediately. The reputation of the industry for good clean advertising is at stake and regardless of whether complaints are issued by the Trade Commission or not, a loss of faith in this industry's advertising by consumers throughout the country would be a calamity."★

Product Rationale

(*From Page* 22)

coffee can be prepared.

New developments in gases could give a big boost to this already booming industry. Improved, less expensive means of pressurizing are needed and will surely be developed. There are relatively few gases now available to the aerosol packer; however, developments with butane, propane and other hydrocarbons look promising. New liquid gases free of toxicity may be coming along. Nitrogen as a propellant came into the picture about two years ago and already is highly popular, because of its non-toxic quality, ease of handling, and because it doesn't change the appearance of the product.★

Propellant/Glycol

(*From Page* 29)

erties as the solubility characteristics but also upon the toxicological properties. This is particularly true of aerosol products formulated for topical applications. On the basis of the published data, many of the glycols appear to be suitable for topical application. Toxicological data for some of the more recent glycols is not available but it is possible that future work may show many of these glycols to be satisfactory for application to the human skin.

The toxicity of many glycols and glycol derivatives is discussed in detail in Ref. 4. Manufacturers of the glycols also provide many publications dealing with the physiological properties of the glycols. The manufacturers of the glycols should be consulted for any questions concerning their toxicities.

Propylene glycol and the polyethylene glycols are reported to be low in toxicity and are used in many products for topical application (Ref. 5, 6). Some other glycols that have been suggested for evaluation in products to be applied to the skin are as follows: 1, 3 butylene glycol; dipropylene glycol methyl ether; Polyglycol 15-200; triethylene glycol; tetraethylene glycol (Ref. 7, 8, 9, 10). 2-Ethylhexanediol 1, 3 has been used extensively as an insect repellent (Ref. 11).

The "Freon" propellants are virtually nontoxic. Toxicity tests at the Underwriters' Laboratories and other data are discussed in Ref. 12.★

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Aerosols in Review

(*From Page* 62)

sol propellants, and non-polar solvents. Permeability to water and acetone and polar solvents is borderline to unacceptable."

Mr. Kemper particularly stresses the cost factor, which he claims grows more favorable to Delrin as the size of the container decreases. "A theoretical 35-mil four-ounce container of optimum design should weigh about 19 grams in Delrin, yielding a material cost of about $45 per thousand at the resin's introductory price of 95 cents a pound. An economical half-ounce purse aerosol container should consume about $15 worth of Delrin per thousand."

One particularly promising field for the material will be closure fabrication, Mr. Kemper contends. The stress-crack resistance and the high tensile strength, he says, will offer the advantage of economical thin-wall designs.

•

PROSPECTS for passage of the bill to require pretesting of cosmetics during the current session of Congress appear to be poor, the Jan. 4 issue of *Oil Paint & Drug Reporter* predicts. The Food & Drug Administration may present its own bill and hearings may be held, but nothing more can be expected to happen, the paper says.

The Fair Trade Bill also stands little chance of passage, particularly in view of the Kefauver price probe and heavy opposition built up during the last session, *OPD* says, but points out that prospects for passage of the bill to require full labeling of hazardous household articles are somewhat better.★

Plastic Containers

(*From Page* 35)

stepping up its interest in this field as attested by the papers read and the committee work accomplished at its meeting in Washington.

Because of this general lack of specific knowledge, thorough testing is essential on all potential products for plastic aerosol packages.

Major questions potential users are developing answers to include the following:

1. Strength and aging properties.
2. Ability to hold product—what change can be anticipated in formulation over a period of time.
3. Costs and ability to handle on production line.
4. Color stability.
5. Design potential, including decoration.
6. Will it sell the product.

Several firms already are packaging in plastics. Those close to the field fully expect a major sales breakthrough within the next few months. It is felt that one of the top names is going to get the jump in their field

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by taking advantage of the merchandising potentials of plastic aerosols. When that happens, plastic containers may be expected to come on fast.★

Chlorinated Hydrocarbons

(*From Page* 52)

Reverting again to the tests mentioned above on hair fixatives containing methylene chloride, it should be stated that two types of pressurizing agents were used: one series with propellants 11 and 12 and a second series with vinyl chloride. No differences could be noted between the two, even with an over-dosage of the active ingredient.

Generally speaking, vinyl chloride may be classified as an "ideal" pressurizing agent for aerosols. It does not require the admixture of other gases to achieve desirable inner pressures and, with propellant and active product in proper balance, it assures a constant, even pressure for the complete discharge of the contents of the container.

Vinyl chloride possesses excellent solvent qualities for many lacquers and also for perfume oils and their stabilizers. As a solvent it is superior to many other propellant types. It has only a slight odor, which is easily masked for cosmetic aerosol preparations. Most of the perfume oils whose compatibility is approved for fluorinated hydrocarbons are also acceptable for use with vinyl chloride.

As already mentioned the flash point of vinyl chloride lies between 545 and 565°C. It will not ignite on a burning cigarette. If absolute non-inflammability is desired in the propellant, it may be obtained by diluting with a fluorinated hydrocarbon.

Vinyl chloride has a very favorable hydrolysis value which, in a neutral medium and at room temperature, is in the order of 0.7 grams of HCL per liter per year. As is generally known, vinyl chloride is the basic material for the widely-used plastic, polyvinyl chloride (or simply, PVC). To accelerate polymerization, catalysts are employed; to delay or hinder it—inhibitors. Good inhibitors are methylene blue and copper ions. Inhibited vinyl chloride should never be used as an aerosol propellant.

As a disadvantage, in comparison with the fluorinated hydrocarbons and the propane-butane propellants, its swelling action on valve elastomers must be mentioned. Offsetting this disadvantage is its higher expansion rate on release into atmospheric pressures. The fluorinated hydrocarbons expand something over 200-fold, while vinyl chloride expands in the neighborhood of 330-fold. Therefore, the nebulization, or true "aerosol" effect, is much superior if vinyl chloride is employed. Finally, its low specific gravity and relatively low cost must also be mentioned.

It has been reported that vinyl chloride is used widely in Japan[7] as an aerosol propellant and, interestingly, to reduce the flammability of propane-butane mixtures. Its use as a propellant has also been reported in Europe, the Argentine and other South American countries.[8]

As we have seen, the number of chlorinated hydrocarbons which possess the solvent and pressurizing characteristics necessary for pressure packaging cosmetic and other products is not very large. Only a few compounds in the methane and ethane branches are suitable. Propane and the others which lie in the higher ranges have relatively little application in this field. In addition, their boiling points increase with the increasing number of carbon and chlorine atoms of which they are composed. This diminishes their propellant suitability, although it enhances their solvent applications.

In conclusion, we hope that our observations on use of the chlorinated hydrocarbons as propellants for pressurized packages may be found useful by the growing aerosol industry.★

Notes

1. "Eric Rotheim—Aerosol Pioneer Extraordinary" by Albert Edelstein, *Aerosol Age*, Vol. 2, No. 3, March 1957, page 18.
2. "Methylene Chloride in Aerosol Production" by Winston H. Reed, *Aerosol Age*, Vol. 1, No. 2, June 1956, page 27.
3. As used in this article the fluorinated hydrocarbon compounds, trichloromonofluoroethane and dichlorodifluoromethane are referred to as "propellants 11 and 12," respectively.
4. Goettingen University, Goettingen, Germany, Dermatological Clinic, Allergy Laboratory, September 1, 1939.
5. "Pressurized Packaging (Aerosols)", by A. Herzka and J. Pickthall, Butterworths Scientific Publications (London) and Academic Press, Inc. (New York) 1958.
6. Goettingen University, Goettingen, Germany. Dermatological Clinic, Allergy Laboratory, Sept. 23, 1959.
7. "Vinyl Chloride Finding Increased Use in Japanese Aerosols" by H. Iosaki, *Aerosol Age*, Vol. 3, No. 2, Feb. 1958, page 22.
8. *Aerosol Age*, Vol. 3, No. 3, March 1958, page 53.

Toni Research Head

(*From Page* 23)

in industry and government had to pay, in time and effort, trying to find some factual basis for this hair spray allegation, was tremendous. All of the laboratory facts growing out of this mighty effort now confirm what the original tests and human experience so clearly established; hair sprays are remarkably safe products! This is just one case, and I could site many, where the industrial scientist is forced to defend his product against the grossly unfair charge."

Mr. Reed listed the following as medical screening tests generally applied to new cosmetic development:

Animal

I. Acute Toxicity
   - A. Acute Percutaneous Toxicity and Irritancy.
   - B. Acute Inhalation Toxicity.
   - C. Acute Parenteral Toxicity.

II. Subacute Toxicity.
   Percutaneous (Draize Procedure).

III. Ophthalmic Irritancy.
   Rabbit Eye Test (Draize Procedure).

IV. Allergic Sensitization
   Guinea Pig Test.

V. Special Chronic Toxicity Studies

Human

I. Primary Irritancy
   - A. Single Occlusive Patch.
   - B. Repetitive Occlusive Patch.

II. Allergic Sensitization
   - A. Repetitive Open Patch.
   - B. Repetitive Closed Patch.

III. Clinic Studies
   Product Use Tests.★

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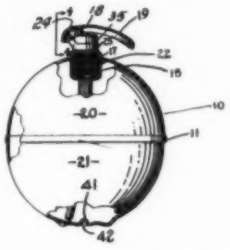
New Aerosol Patents

Listed below is a brief review of recent patents pertinent to the aerosol and related industries.

Complete copies of these patents may be obtained by writing to the Commissioner of Patents, U. S. Patent Office, Washington 25, D. C., and remitting 25 cents for each copy desired.

2,915,251. HAND OPERATED AEROSOL SPRAY DEVICE. Issued Dec. 1 to Harold D. North, Jr., Shaker Heights, Ohio, assignor to Engine Parts Manufacturing Co., Cleveland.



A dispensing device for low pressure liquified gas solutions, comprising a container for said gas solutions, valve means mounted to said container having means exterior of said container to actuate said valve, a fluid conducting conduit contained within said container, said conduit comprising a tubular member having one end thereof connected to said valve means, filtering material under compression disposed within said tubular member adjacent said valve means, said tubular member distorted at a medial portion thereof to maintain said filtering material under compression, and additional filtering material disposed within said tubular member adjacent the end thereof opposite said valve means.

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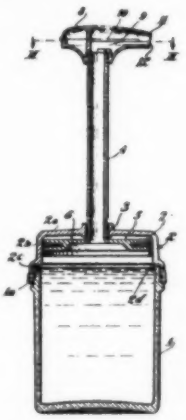
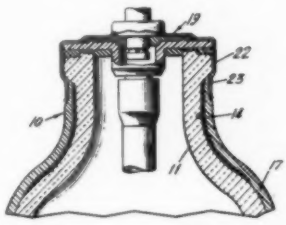
2,915,225. VISCOUS FLUID DISPENSER. Issued Dec. 1 to Herbert Ashley Atkins, Kenton, England, assignor to County Laboratories, Ltd., Stanmore, England, a company of Great Britain.



A viscous fluid dispenser comprising a cylindrical container open at one end and at said one end presenting an uninterrupted annular surface; a removable unitary cup-shaped cover having one open end, an end wall and a side wall constituted by a first side wall portion of inside diameter less than the inside diameter of said container and a second side wall portion of inside diameter greater than the inside diameter of said container, an uninterrupted annular shoulder intervening between the insides of said cover side wall portions axially intermediate the ends of said cover and overlapping and engaging said container annular surface, an inner part of said shoulder extending inwardly of the inside of said container where said shoulder engages said annular surface; a hollow plunger rod mounted to slide axially through said cover; a manually operable knob at the end of said plunger rod outside said container and having a discharge passage communicating with the interior of said plunger rod; a plunger mounted on said plunger rod within said container and having a diameter less than the inside diameter of said first cover side wall portion; and a resilient washer mounted on said plunger and turned over to form a skirt extending toward the container closed end and away from said cover end wall, said washer skirt being drawable into said cover first side wall portion upon movement of said plunger thereinto.

•

2,917,197. REINFORCED GLASS AEROSOL CONTAINERS. Issued Dec. 15 to William S. Glover, Vineland, Joseph F. West, Millville, Paul A. Roush, Vineland, and Alfonse E. Budzilek, Millville, N. J., assignors to Wheaton Glass Co., Millville, N. J., a corporation of New Jersey.



A container adapted to contain a product under pressure to be dispensed in aerosol form comprising a frangible bottle having a discharge opening, an organic adhesive bonded to exterior portions of said bottle, a continuous sheath of elastically expansible plastic material freely overlying substantially the entire exterior surface of the bottle, and being bonded only to said organic adhesive, said sheath being elastically expansible where freely overlying said bottle by said pressure when released upon explosive fracture of the bottle, said sheath having tensile and tear strengths to withstand the initial explosive force and when expanded having tensile and tear strengths operable within the elastic limit of said sheath to confine and retain said pressure and the fracture fragments of the bottle, and said sheath having at least one vent therein operable upon expansion of said sheath to gradually exhaust said pressure therefrom while still retaining therein the fracture fragments of said bottle.

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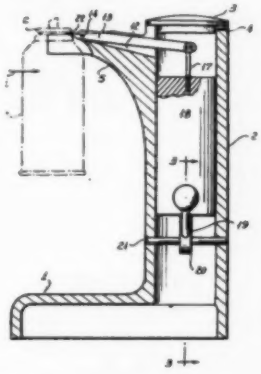
2,915,895. SEAL TESTER FOR PRESSURIZED CONTAINERS. Issued Dec. 8 to Richard A. Neiss, Bronx, N. Y.



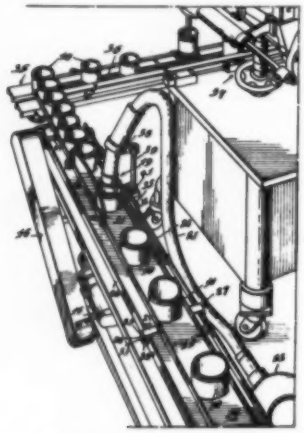
A seal tester for pressurized containers wherein an opening in the container body is sealed by a valve carrying cup having a marginal projecting portion, comprising: a testing frame for supporting the body of the container in a predetermined position, a lever fulcrumed on the testing frame the work arm of which lever is adapted to project between the marginal portion of the cup and the container body, and means acting upon the power arm of said lever to cause the work arm thereof to exert a prying action on the cup to test the effectiveness of the seal.

•

2,917,768. AIR CLEANING MACHINE FOR CONTAINERS. Issued Dec. 22 to William A. Walberer, Chicago, assignor to Fearn Foods Inc., Franklin Park, Ill.

Means for removing from the open end of jars and other containers foreign matter collected therein before delivering said cleansed containers to a filling machine, comprising a conveyor, means for receiving and delivering these containers in spaced relation to said conveyor, adjustably mounted laterally spaced bars above said conveyor for maintaining the containers in aligned relation on said conveyor and suction means including a nozzle mounted in close proximity and to apply suction to the open end of successive containers as they are moved to and across the suction opening of the nozzle, said nozzle being of smaller external dimensions than the open end of said containers with suction from the nozzle effecting a turbulent air flow in each container as said container is moved by said conveyor into and out of centered position beneath said nozzle and exhausting foreign matter collected therein, and

spaced members arranged above the open end of said containers adjacent said nozzle, said members being spaced apart a



distance less than the width of said containers for intercepting the upper open end of the latter when elevated by the suction of said nozzle, each container having its open end opening toward and in close proximity to the nozzle whereby suction is applied to each of said spaced containers as soon as its open end is moved into the zone of influence of said nozzle, and as each container is moved by the conveyor to centered position below said nozzle the suction lifts said centered container from the conveyor into contact with said spaced members in which centered position air is drawn into the centered container about the periphery of the nozzle, and the centered container remains elevated and stationary until it is contacted and moved out of its centered position by the next container travelling on the conveyor which moves into centered position.

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Trade Mark Applications

Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however, many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.

INSECTA-TOX, for insecticide. Filed Oct. 8, 1958 by Commonwealth Sanitation Co., Pittsburgh, reporting first use Sept. 5 of same year.

PINE-SOL, for spray room deodorant. Filed May 28, 1957 by Dumas Milner Corp., Jackson, Miss., with first use reported as Nov. 2 of previous year.

T-H ALL PLANT SPRAY, for insecticides and fungicides. Filed Dec. 5, 1958 by Thompson-Hayward Chemical Co., Kansas City, with first use claimed for Feb. 17 of same year.

DOG SWAT, for chemical dog repellent. Filed April 6 by The Garden Protector Corp., Revere, Mass. claiming first use Dec. 21, 1957.

METALTONE, for metallic hammer-finish spray in aerosol containers. Filed April 8, 1957 by Ideal Chemical Products, Inc., Culver City, Calif., with first use claimed for June 1, 1955.

DECASPRAY, for medicinal preparation for use in the treatment of certain nasal disorders. Filed May 27 by Merck & Co., Rahway, N.J., reporting first use April 29.

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TRYPGYN, for physiological debridement agent for topical application. Filed June 4, 1958 by Dumas Milner Corp., Jackson, Miss., assignee of Taylor Laboratories, Houston, with first use reported for Dec. 23 of previous year.

ACTIDION, for fungicide for use in preparing a spray for the control of powdery midew fungicide of roses. Filed March 28, 1958 by The Upjohn Co., Dover, Del., assignee of The Upjohn Co., Kalamazoo, Mich., reporting first use March 7, 1958.

OFF!, for cleaner contained in a pressurized spray can for automobile tires and automobile soft trim such as leatherette, vinyl, plastic, and similar surfaces. Filed Aug. 11, 1958 by The American Silicone Co., Englewood, Colo., reporting first use Dec. 14, 1957.

A.C.A., for foot and shoe spray. Filed June 25 by Aerosol Corp. of America, Wellsley Hills, Mass., claiming first use Feb. 25.

JETTO, for chocolate flavored syrup. Filed Feb. 18 by Maison Julien, Inc., New York, with first use said to have been Jan. 28.

WHIM, for hair color spray. Filed Feb. 20 by Helene Curtis Industries, Chicago, giving first use Nov. 28, 1958.

NERONE, for aromatic chemicals suitable for use in perfumes, soaps, cosmetics, flavors. Filed Jan. 8, 1959 by Givaudan-Delawanna, Inc., New York, first use given as Dec. 9, 1958.

SWEET DOGGIE, for deodorant for pets. Filed March 6, 1958 by Dayle Products Co., Boston, reporting first use Feb. 18 of same year.

AIRFLO, for drying and setting spray for fingernail enamels used by professional beauticians in beauty shops. Filed March 20, 1958 by Middlebrooke-Lancaster, Inc., Brooklyn, with first use given as Sept. 1928.

CLAIR DE LUNE, for hair lacquer, hair setting, and fixative sprays, wave setting lotions, and perfumes. Filed May 12, 1958 by Aktiengesellschaft fur Lizenzverwertungen Alvex, Coire, Switzerland, listing priority under Swiss patent dated April 3, 1958.

CUT & CURL, for hair spray and wave set lotion for the hair. Filed Nov. 13, 1958 by Cut & Curl, Inc., Hempstead, L. I., listing first use as March 15, 1958.

(*Continued on Page* 102)

CLASSIFIED ADVERTISING

Address all classified replies to Box Number c/o *Aerosol Age*, PO Box 31, Caldwell, N. J. Rates for "Help Wanted" advertisements are 20¢ per word; minimum charge $3.00. Rate for individuals seeking employment is 5¢ per word, $1.00 minimum. Advertisements of new machinery, products and services accepted at the rate of $10.00 per column inch. Minimum space, one inch. Copy closing date, 10th of preceding month. *Checks must accompany all orders.*

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Cyanamid Plans Pakistan Plant

A new half-million-dollar pharmaceutical plant will be constructed this year in Karachi, Pakistan, by the Lederle Laboratories Division of American Cyanamid Co., New York. Plant operations will include formulating, tableting, encapsulating, and packaging of drug products for the Pakistani market.

Cyanamid's operations in Pakistan are conducted entirely by citizens of that country. General manager of Lederle Laboratories (Pakistan) Ltd. is Group Capt. A. M. Morad.

•

Bon Ami To Brazil

Bon Ami Co., New York, has concluded an agreement with Robert Sampaio Ferreira, Sao Paulo, to produce Bon Ami products exclusively for the Brazilian market.

Stier Becomes Nopco Head

George G. Stier has been elected president of Nopco Chemical Co., Newark, N. J. producer of solvents. He succeeded Ralph Wechsler, who was moved up to the post of board chairman.

•

ConCan Appoints Hughes

Dr. Harold K. Hughes has been appointed director of the department of physics at the Central Research and Engineering Division of Continental Can Co. in Chicago. He will head the company's research work on the application of the principles of physics to high-speed automatic production equipment.

Ansul Suffers Major Fire

Ansul Chemical Co., Marinette, Wis., manufacturer of pressurized fire extinguishers, recently suffered a major fire at its fine chemicals plant which killed two workers and injured four others. The plant had been closed down for year-end repairs, and explosion-proof walls and fire retardant-construction materials held the damage to a minimum. The company's Chemical Division reported that large-volume production of fire equipment, and refrigeration products would not be interrupted.

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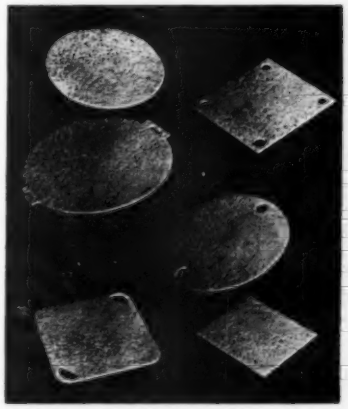

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New Trademarks

(*From Page* 100)

SHAVE MATE, for pressurized shaving cream. Filed March 19 by Regal Chemical Corp., Brooklyn, reporting first use Oct. 14, 1958.

CEASE, for bathroom deodorant. Filed Dec. 24, 1958 by Russel L. Bailey, d.b.a. The Cease Co., Los Angeles, claiming first use on or about March 1 of same year.

323, for liquid spray for use in coloring floral arrangements. Filed Nov. 12, 1958 by The Sargent-Gerke Co., Indianapolis, with first use reported Oct. 1, 1957.

POWER, for cosmetic deodorant and anti-perspirant. Filed April 20 by Carter Products Inc., New York, with first use claimed for Feb. 18, 1958.

SANOZONE, for deodorants of the room and household variety. Filed Oct. 16, 1958 by Sanzone Co., Webster Groves, Mo., reporting first use in Oct. 1918.

STRI-DEX, for preparation for the prevention of acne and other facial skin affections. Filed July 20 by Lehn & Fink Products Corp., Bloomfield, N. J., with first use reported as May 4.

SOFT N' CURLY, for hair spray set. Filed Sept. 27, 1957 by Helene Curtis Industries, Inc., Chicago, claiming first use Sept. 5 of same year.

SARFEEN, for germicidal and fungicidal medication for treating the hair and scalp. Filed Dec. 15, 1958 by Happy Jack, Inc., Snow Hill, N. C., reporting first use Oct. 10 of same year.

SPRAY PUFF, for talcum powder. Filed May 18 by Prince Matchabelli, Inc., New York, claiming first use April 16.

AWAY, for breath sweetener in spray form. Filed April 14 by Colgate-Palmolive Co., New York, giving first use as March 11.

SATIN GLIDE, for perfumery. Filed May 5 by Evyan Perfumes, Inc., New York, with first use reported as April 15.

EQUALAN, for moisture repellent ingredient incorporated in a hair spray. Filed Jan. 22, 1959 by Shulton, Inc., Clifton, N. J., giving first use Dec. 12, 1957.

QUIT ITCH for external medicinal preparation for the relief of skin irritation. Filed May 11 by Weco Products Co. Chicago, claiming first use Sept. 1, 1951.

NESTLE'S ZIP, for chocolate syrup for food purposes. Filed Feb. 3 by The Nestle Co., White Plains, N. Y., giving first use as Jan. 6.

MAGIC MIST, for liquid preparation applied in spray form with a resultant film to sundry parts composed of wood, metal, rubber, and other materials for the purposes of rustproofing, waterproofing, lubrication, sealing, and the elimination of noise. Filed April 13 by Garry Laboratories, Buffalo, with first use claimed for Nov. 4, 1958.

PERMA, for laundry starch. Filed Feb. 9 by Dumas Milner Corp., Jackson, Miss. with first use listed as May 15, 1947.

ARRIVE BEAUTIFUL, for purse-size hair spray set. Filed June 26, 1958 by Rabco Cosmetics, d.b.a. Paulita Dist., Lake Forest, Ill., with first use claimed for June 12 of same year.

SUDDENLY, for perfumes, colognes, personal deodorants, and other cosmetics. Filed July 15, 1958 by Van Dyk & Co., Belleville, N. J., listing first use as Dec. 2, 1955.

TOUCH-N-SPRAY, for liquid cosmetic atomizers. Filed Jan. 10, 1958 by Richford Corp., Oceanside, N. Y., giving first use date as Oct. 31 of previous year.

JET PAK, for germicidal and fungicidal medication for treating the hair and scalp. Filed Dec. 15, 1958 by Happy Jack, Inc., Snow Hill, N. C., reporting first use Oct. 10 of same year.

WESTPORT, for hair spray, colognes, perfume, and other cosmetics. Filed March 12 by Avalon Inc., Baltimore, giving first use as Jan. 2 of same year.

GIRDLE FRESH, for antiseptic antichafing skin softening deodorant powder spray. Filed April 24 by The Andre L. Richard Co., New York, reporting first use April 10.

•

Richards to Colton Post

David J. Richards has been appointed a sales engineer in the Chicago office of Arthur Colton Co., Detroit aerosol filling equipment manufacturer. Formerly an industrial sales engineer for several Chicago firms, he will cover central Chicago, northern Illinois, Wisconsin, Minnesota, Iowa, and Nebraska.

•

Pennsalt Names Clem

Pennsalt Chemicals Corp., Philadelphia, has named Albert H. Clem, former manager of its Chemical Specialties Division, to be vice-president for marketing. He is replaced in his former post by George R. Lawson, show had been director of marketing in the Industrial Chemicals Division.

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Paint Group Changes Names

The 37-year-old Federation of Paint and Varnish Production Clubs recently changed its name to the Federation of Societies for Paint Technology. According to the group's administration, previous name was considered old-fashioned and "production club" was thought to sound too much like a union.

Adoption of the new name threatened to stir up considerable dissension within the club, one group of clubs refusing to recognize the new name.

Maurice Levy Dies at 79

Maurice D. Levy, 79, founder and president of Mauvel, Ltd., manufacturers and importers of cosmetics, died last month after a brief illness. He was president of the Perfumery Importers Association of New York.

OVER THE TRANSOM

IN our opinion, it's about time the European Federation of Aerosol Associations was given some official recognition by the CSMA. Serious consideration should be given to the possibility of sending one or two officially-designated "observers" or "delegates" to the April meeting in Dusseldorf. The once-common (but never very valid) contention that the European aerosol industry is "three to five years behind ours and can teach us nothing" is becoming more and more ridiculous as European technology pulls abreast of the U.S. industry in so many fields. In fact, in many technical aspects (new propellant system development, can making technology, etc.) European aerosol experts are *ahead* of those in this country.

And when we suggest having an official representative from CSMA to attend this European gathering, we are *not* thinking in terms of someone who "just happens to be going over anyhow," and will pay his own expenses. Such a delegate is obviously going to have a lot of affairs of his own to attend to. What is needed is a full-time "official representative," with expenses paid by the association, who would be expected to devote 100% of his time to see that the CSMA is adequately represented.

* * *

While on the subject of the aerosol convention in Europe, it might be added that the suggestion has been made to the CSMA office that the membership be sounded out on whether a sufficient number would be interested in a group aerial trip to Dusseldorf to attend the meeting. Groups in other industries has sponsored such tours —lasting two or three weeks—at an overall cost for transportation of under $300.

* * *

A number of readers of this informative column have questioned the accuracy of a brief paragraph in the January issue, saying that the by-laws of CSMA had to be changed to make possible the election of Fred Lodes as new association treasurer. These readers point out that the by-laws were changed over a year ago, well before there was any thought of vacancy in the CSMA's executive family.

CSMA, by the way, is very fortunate to have, in this rugged, time-consuming job, a man like Lodes who has given so generously of his time to the organization over the years. To set the record straight on the events that led to his election, back in September of last year a special committee recommended to the board of directors that it be made possible for an associate member to become an active member. This change was approved by the board and announced in an Association bulletin. Despite this announcement, a large number of members, including the editorial staff of this magazine, was not aware that such a change had been made.

As a matter of fact, even now that we know the decision was made, it is difficult to figure out *why*, regardless of the merits of the present case. There seems little rhyme or reason for having *two* classes of members, if a shuttle arrangement exists making it possible to switch back and forth. Somehow, we're used to the idea of "active" members and "associate" members, and never the twain shall meet. But then maybe we're slightly old-fashioned!

* * *

It might be added here that there is not much excuse for any CSMA member not knowing what is going on in the Association. CSMA business is conducted in a real gold-fish-bowl atmosphere. This is the only association we know of where meetings of board of governors, executive committees, etc. are open to attendance by any interested member of the association. This is an excellent policy, one which could very profitably be copied by other associations.

* * *

We hear that the CSMA is currently taking a poll to determine what to do about the suppliers' night program at the December convention in Hollywood Beach, Fla. Naturally, those queried included those that participated in sponsorship of the program held the last time the association met at the Hollywood Beach Hotel, which appeared to be highly successful. Nobody has yet asked our opinion but our prescription would be "turn the affair over to a good chairman, and stay out of his way."

* * *

The reason aerosol packages have not made a particular dent in the economy of Scotland is because all of the custom fillers in the United Kingdom are in Great Britain, suggests the *Glasgow Herald*. It seems that Scottish manufacturers are traditionally hesitant about entrusting so important a part of their packaging activities to their English brothers.

Next entry into the coated-glass container field may well be Ball Brothers Co., Muncie, Ind. long established manufacturers of home preserving jars and other food glass containers. We hear Ball Brothers already has containers carrying pressurized products under shelf test.

* * *

Among the major food firms researching aerosol products is Libby, McNeill & Libby, which is currently experimenting with pressurized mayonnaise and cake frosting. Kraft is already on the market with its long-awaited topping.

* * *

Though the much publicized Kefauver committee hearings on pharmaceutical prices may seem far removed from the aerosol industry, their effects on pressurized packaging may be more far-reaching than most of us may realize. One likely result is the killing off of any chances for passage this session of the Fair Trade Bill (if they weren't dead already). Another is that some of the major pharmaceutical houses may curtail their research effort, thus possibly delaying entry of these companies into the market with an aerosol product. Still another less likely possibility, in the event of any legislation in this field, might be economic sanctions against some of these companies—and this would include Colgate-Palmolive, Revlon, and the other major aerosol marketers which have recently entered the pharmaceutical field.

* * *

One unusual feature of the $250,000 coming out party given debutante Charlotte Ford (at the Country Club of Detroit) by her automobile magnate father Henry Ford II was a hairdresser, equipped with an aerosol hair spray, who "flitted about the party spraying and combing falling female locks" among the 1270 guests.

* * *

Our nomination for the most unique aerosol advertising gimmick in recent months is an aerial "demonstration" staged over Miami Beach this winter. An airplane towed a 15-foot-long shoe, behind which was an aerosol shoeshine can almost as large. Behind the spray can a 150-foot banner with the product plug. We don't know the name of the marketer, but congratulations anyway!

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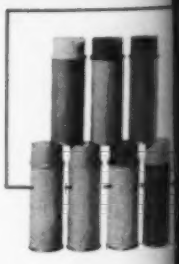

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